

# ELECTRICAL UTILITIES

THE CRISIS IN PUBLIC CONTROL

WILLIAM E. MOSHER  
AND OTHERS

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ELECTRICAL UTILITIES

*The Crisis in Public Control*



# Electrical Utilities

THE CRISIS IN PUBLIC CONTROL

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ELECTRICAL UTILITIES  
THE CRISIS IN PUBLIC CONTROL

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## Foreword

*Electrical Utilities, the Crisis in Public Control*, is one of a series of studies of social problems prepared under the auspices of the School of Citizenship and Public Affairs of Syracuse University. It was undertaken as a staff project because, like so many social problems, it presents a variety of facets which can be adequately illuminated only through the collaboration of a number of specialists. Thus economists and engineers joined hands with political scientists, a social psychologist, a statistician and a specialist in public law. Among the consultants of the staff were also a sociologist and an accountant.

Recognition is due to Harvey W. Peck, Ralph S. Dewey, J. B. Reid, W. H. Steiner, Adrian M. Landman, and Miss Mary Johnson for their preliminary investigations and other services as advisers and consultants, and to H. S. Raushenbush for editorial and other suggestions.

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It is hoped that this survey of the electrical utilities may contribute to a better understanding, and possibly toward a solution, of the problem of control that is rapidly emerging as of dominating importance for the economic and social progress of the nation. In the following treatment of the

subject the effort has been made to avoid dogmatic theory and prejudice and to proceed on the basis of factual and reviewable evidence.

WILLIAM E. MOSHER, Director  
School of Citizenship and Public Affairs  
SYRACUSE, NEW YORK  
May, 1929



## *Introduction*

The electrical power industry has grown rapidly to a place of great importance in the economic and social life of the country. The full extent of its influence has not yet been felt. In many ways it bids fair to revolutionize the social and industrial conditions of our time no less profoundly than did the introduction of steam power a hundred and more years ago. It may indeed bring about more sweeping changes than those effected by the original industrial revolution, because electricity is much more easily controlled and adaptable to a wider range of uses than steam.

The growth of the industry can be indicated briefly. The main lines of its past development are fairly clear. No study such as this, can do much more than sketch the outlines of the picture at the present time. Changes of major importance are now under way. The first six chapters of this study deal with the present status of public control in the industry. They indicate a crisis in public control at the present time which, when passed, will mark the lines along which the industry may be expected to follow for perhaps the next fifty years. The remaining chapters consider various alternative methods of control which are now a matter of considerable interest to the industry and to the public. Their adoption or rejection will mark with some clearness the passing of the present crisis.

Some of the industry's main problems have come with its amazingly rapid development. During the lifetime of its founder, Thomas A. Edison, it has passed from infancy to full-fledged adulthood. The Edison plant in New York

City, founded in 1882, has become part of a billion dollar corporation controlling practically all the gas and electric light and power business in Greater New York. In the space of some forty-five years the industry has grown from nothing to the place where it supplied, in 1928, about 88 billion kilowatt hours.

INSTALLED CAPACITY OF THE CENTRAL STATION INDUSTRY <sup>1</sup>

---

1899.....	120,000 horsepower
1927.....	34,033,000 horsepower

---

The first years showed a slower development than the last ones do. In the years from 1920 to 1926 alone the production of kilowatt hours came close to doubling.

PRODUCTION OF ELECTRICAL POWER BY PUBLIC UTILITY POWER PLANTS IN UNITED STATES 1920-26, IN THOUSANDS OF KILOWATT HOURS <sup>2</sup>

---

Year	Total Production	Produced from Waterpower	% of Total	Produced from Fuels	% of Total
1920	43,554,880	16,149,709	37.1	27,405,171	62.9
1926	73,791,064	26,188,801	35.5	47,602,263	64.5

---

This production represents an investment in the central station industry, electric railways, telephones and electrical manufacturing which is estimated to be over twenty billion dollars. The electric power industry alone is said to represent an investment exceeding nine billion dollars in 1927. The stock and bond issues aggregated 1.6 billion dollars in 1928.<sup>3</sup> Many thousands of power plants have

<sup>1</sup> U. S. Department of the Interior. "Water-Supply Paper 579," *Power Capacity and Production in the United States*. Washington, 1928, pp. 32, 202.

<sup>2</sup> *Ibid.*, pp. 132-165.

<sup>3</sup> *Electrical World*, January 5, 1929.

been built with this money. In the development of interconnected facilities, a characteristic of the last ten years, many of these have been discarded or converted into substations. A recent count establishes the fact that there are 3,740 central lighting and power plants now in operation in this country.<sup>1</sup>

A large part of the production has been absorbed by the manufacturing plants of the country, replacing mechanical power. The claim is often made that the availability of cheap power for industrial purposes has played a greater part in maintaining the relatively high wage scale in this country than such other factors as the large domestic market, the tariff and the abundance of natural resources. Some idea of the growth of the use of electrical power by industry can be gained from the following table.

---

DEVELOPMENT OF ELECTRICAL POWER IN MANUFACTURES

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Electrical Power Generated and Purchased

1899.....	4.9 per cent of total used
1925.....	72.7 per cent of total used

---

In many parts of the country the one-time luxury of electric light in the home has become a necessity, and new buildings are now erected with full equipment as a matter of course. The rate of consumption per capita is higher in the United States than in other countries in the world, excepting sparsely settled Canada and Tasmania and the small country of Switzerland.

<sup>1</sup> Bulletin of the Geological Survey, April 16, 1928.

PER CAPITA CONSUMPTION OF ELECTRICITY <sup>4</sup>

Canada.....	900 units per capita
Switzerland.....	700 “ “ “
Tasmania.....	550 “ “ “
United States.....	500 “ “ “
Norway.....	500 “ “ “
Sweden .....	500 “ “ “
Great Britain.....	200 “ “ “

Despite the growth of the industry between 1882 and 1926 the potential production and consumption of electricity are far from being realized. According to estimates of the Department of the Interior, nearly 97,000,000 horsepower <sup>5</sup> was still unharnessed in the waters of the country in 1924. The portion of this grand total available 90 per cent of the time, i.e., 38,000,000, would, if operated at 100 per cent load factor, be more than three times the amount of water power generated by the public utility plants in 1927.<sup>6</sup> These figures leave out of account the huge potential development of coal resources. With the increased efficiency of modern methods of steam generation <sup>7</sup>

<sup>4</sup>Orren C. Hormell, "Electricity in Great Britain. A study in Administration," *National Municipal Review*, Supplement to Vol. XVII No. 6, June, 1928.

<sup>5</sup>Of this amount 38,000,000 horsepower is available 90 per cent of the time and 59,000,000 available 50 per cent of the time. Statistical abstract of the United States, 1928, p. 816.

<sup>6</sup>Electricity generated by manufacturing plants for their own use is not included in this estimate.

<sup>7</sup>In 1919 three and two-tenths pounds of coal were required to generate one kilowatt hour of electricity while in the short space of seven years this had been reduced to 1.95 pounds. "Water Supply Paper 579," p. 121. This average was reduced to 1.7 pounds in 1928. *Electrical World*, January 5, 1929, p. 19. The best plant of the Boston Edison Electric Illuminating Co. used but one pound according to an article in the *Electrical World*, April 11, 1926, p. 809.



and of long distance transmission<sup>8</sup> as well as the feasibility of producing electricity at or near the mine head on an extensive scale the amount of current available from this source is capable of indefinite expansion.

From the viewpoint of consumption it may be pointed out that central stations and industrial plants in 1924 had a combined installed capacity of 45,000,000 horsepower<sup>9</sup> while 75 per cent of all industrial plants were electrified.<sup>10</sup> Furthermore, the possibilities of expanding the consuming powers of householders have hardly been tapped. This is borne out by estimates as to the number of domestic electrical appliances in use in 1928.<sup>11</sup> The following figures are particularly pertinent:

Wired homes.....	19. million
Irons.....	17. million
Vacuum cleaners.....	7.7 million
Washing machines.....	5.7 million
Toasters.....	5.3 million
Refrigerators.....	1.2 million
Ranges.....	725,000

With over 20,000,000 homes unequipped with any of these devices except electric lights and irons and with the possibility of utilizing electricity both for water and house heating, it is obvious that the domestic demand may be increased many times over.<sup>12</sup>

<sup>8</sup> Electricity may now be profitably transmitted from 250 to 300 miles with losses not to exceed 10 per cent. Power generated at Niagara Falls is delivered at Windsor, Ontario, a distance of 237 miles, over a 110,000 volt line. "Pennsylvania-Giant Power Company," pp. 28, 29. In a paper on "Superpower Transmission," E. L. Moreland maintains the feasibility of transmitting certain base loads a distance of 500 miles at 220,000 volts. *Journal American Institute of Electrical Engineers*, February, 1924.

<sup>9</sup> *Mechanical Engineering*, January, 1925, p. 2.

<sup>10</sup> *Electrical World*, January 5, 1929, p. 40.

<sup>11</sup> *Electrical Merchandising*, January, 1929, p. 63.

<sup>12</sup> It is estimated that there are 27,900,000 families in the United States. *Electrical World*, February 16, 1929, p. 375.

It is worthy of note that in spite of the apparently less intensive development of the domestic field as compared to the industrial it is from the former that the larger percentage of the gross revenue of the companies is derived. The following table is from a compilation which appeared in the *Electrical World* of January 5, 1929:

Year	Per Cent of Total Gross Revenue	
	Lighting	Power, Electric Railway and other Utilities
1923.....	61.3	38.7
1925.....	66.2	33.8
1927.....	58.2	41.8
1928 (May-August).....	56.4	43.6

Electrification of rural areas has limped far behind industry and domestic service. As compared with Germany, Sweden, Denmark, and Ontario comparatively little progress is being made in this country although about one-half of our population is classified as rural. It was recently estimated that only 500,000 farms of the total of 6,500,000 farms in the United States were using electric energy generated in a central supply station.<sup>13</sup> When the relatively large amount of power required in running a farm is considered, about 31 horsepower per acre, the extent of the market which will be available when electric current is cheap enough for the farmers to avail themselves of it, may be seen.

Nearly one-half of the electrical energy produced in the country is devoted to industry and electrical utilities and furnished at a low price. The lowness of the price may be explained in part by the fact that industry with mechanical power already installed had the resource of furnishing the power required by establishing its own electrical plants unless central station supply furnished competitively low rates.

<sup>13</sup> *Electrical World*, January 5, 1929, p. 19 and January 12, 1929, p. 85.

The increasingly large share of power which industry in general has taken from the central station plants, together with its contribution to the gross income, may be seen from the following table.

ENERGY OF POWER CUSTOMERS <sup>14</sup>

Year	Total Central Station Energy (thousands of kwh)	Devoted to Power Consumer (thousands of kwh)	% of Total
1913	13,700,000	4,400,000	32.1
1921	37,991,000	16,730,700	44.0
1926	70,664,000	35,154,000	49.7

The effect of this low priced power was toward lowered unit costs of articles produced. To a certain extent it has offset in recent years the increased price of materials used in manufacture and the increased cost of labor in certain industries. There is no important industry from mining and smelting of ore to transportation and, to a lesser extent, agriculture, which has not been benefited by the adoption of electrical power. Its character makes it available for thousands of uses to which steam power is adapted only with difficulty, if at all.

Electricity has not alone given rise to increased productivity at lower unit cost. It has in many ways also reduced the amount of laborious and often heavy drudgery which the workers throughout history have been forced to do. It is now estimated that for each wage-earner 4.7 horsepower of electricity is being used.<sup>15</sup> The development of machines which will do the semi-skilled and even skilled work of many men is already under way. To the

<sup>14</sup> *Electrical World*, January 7, 1928. In 1921 gross revenues were \$994,400,000 of which the power consumers supplied \$267,800,000. In 1926 gross revenues were \$1,652,300,000 of which the power consumers contributed \$461,000,000.

<sup>15</sup> *Ibid.*, January 5, 1929, p. 40.

extent that they take the place of workers their development, and the whole problem of the use of electrical power, affects the workers of the country. In some trades its effect is being shown in a movement to reduce the number of working hours and days. If the country succeeds in absorbing the number of men displaced by the new industrial revolution due to electrical power, there may be a considerable increase of leisure for the workers. This is at least one of the promises of the industry.

Another social effect of great importance may be a reversal of the trend of the past years which took the form of a movement from the rural sections and towns of the country to the big cities. The result has been to present certain of the large industrial cities with problems of housing and transportation almost beyond their capacity to solve. The character of the nation has been profoundly affected by this development. There are many who think that the growth of the great cities has been one of the worst evils which can be charged to the era of steam, and that the most significant social contribution which electricity can make is to create a situation where the factories will not have to move to the cities in order to obtain cheap power and labor, but will be able to locate in towns where the living conditions offer an environment more conducive to well-being than many of the large cities now do.

The only evidence of any importance collected on this movement is furnished by the Giant Power Survey Board of Pennsylvania. It found that since 1914, when really efficient transmission of electric power was getting under way, there has been a definite trend upward of power consumed by industry in communities of less than 10,000 population. This trend is much sharper than the one evidenced in cities of over 50,000 population, which in turn is somewhat sharper than that in cities between 10,000 and 50,000



population.<sup>16</sup> Cheaper factory sites and house rents play a part in this decentralization.

In the domestic sphere a slow revolution is going on. If the devices even now in the market are generally installed, a great step forward in the abolition of household drudgery and the elimination of discomfort will have been made. In some isolated sections of the country heating of houses by electricity has displaced the coal furnace. These are sections supplied by cheap power. In other parts the price of current is so much higher that the operation of these time and labor saving devices is limited to the middle and well-to-do classes.<sup>17</sup> The transformation of domestic life both in the urban and farm areas of the country remains one of the promises of electricity.

The promises of any great instrument of change, of any industry or invention which has in it the power to transform the world, often outrun performance. The promoters of the steam engine, who once claimed for it that it would bring prosperity and leisure to all, would have to admit, if they were alive today, that it has fallen far short of that promise. In those industrial countries which had great natural resources of their own, such as England and Germany, it has perhaps done more to accentuate than to level class lines within the community.

Steam was, however, at no time under the social control which has, in this country at least, been exercised over the electric power industry within the past two decades. The far-reaching social effects and function of the electrical industry in our social system were recognized with relative alacrity. It was seen in its very nature to be a quasi-public enterprise, and as such subject to an entirely different type

<sup>16</sup> Report of the Giant Power Survey Board of Pennsylvania, 1925, pp. 76, 77.

<sup>17</sup> Compare Chapter IX, "Control by a League of Municipalities."

of control and an entirely different code of ethics than private business. The relative welfare of large sections of the population was dependent upon an abundant supply of power at reasonable prices. It became a necessity not only in industry but in the home and on the city streets. Competition in distribution was so costly to the public that it became necessary to eliminate it, to grant monopolistic privileges. The same development is now taking place in regard to generation of power. The industry, furthermore, could not grow without the privileges of using such public properties as streets, highways and water courses. It needed further the privilege of exercising the state's power of eminent domain.

It was impossible for an industry so essential to the country and deriving so many privileges from the state to be considered a private industry. Its importance in our economic and social life, together with the freedom from competition granted it by the state, gives it certain responsibilities to the public which other industries do not have. A different code of ethics governs, or should govern, its policies.

There has been in the past, and occasionally still is, some attempt on the part of individuals connected with the industry to deny or minimize its social character and responsibilities. The process of state regulation, with all its weaknesses, which was the substitute for competition decided on by this country, has been attacked from within the industry. Only recently, since the further substitute of public ownership of part of the industry has been discussed, has that attack on regulation ceased.

The electric power industry performs an essential social function. The state might perform this function. When it leaves it to the industry to do so, the industry acts in a way as an agency of the state. Its employees are quasi-public officials. The results of their efficiency are supposed

to be for the benefit of the public. The results of their inefficiency are in any case paid for by the public. The only money the industry makes comes from the consuming public. The taxes it pays to the state are simply funds collected by it from the consuming public and handed over to the state or municipality for its various public uses. The state has the power to condemn and appropriate the industry at any moment, either in case of war or when general public necessity is served thereby.

Under such conditions the conduct of the industry and its employees must be considered in the light of social values. The public has a right to insist that its development should not be governed entirely with respect to the stockholders, but with equal regard for the welfare of the public served. In fact, since a stable income is practically guaranteed under the conditions of existing rate regulation, the policies of these quasi-public officials should be determined primarily by the aim to render the utmost service to the public at large. A strict interpretation of this obligation might mean, among other things, the electrification of rural and other areas that give little promise of high returns immediately. It would also mean the reduction of rates to domestic consumers for the purpose of encouraging consumption. Although many companies have shown a spirit of progress in these directions that is highly commendable, these policies have not yet been generally adopted. The subsequent chapters discuss the extent to which the industry is still being administered as any other exploitative private industry. The returns from the original investments are being pyramided, and a financial structure is being erected without adequate public supervision which bids fair to impose an appreciable burden on the industry and one which will affect rates to consumers for an indefinite period.

To the extent that those in control of the industry resent and resist public regulation and take profits in excess of a fair return on the prudent investment in the industry, they are obviously looking upon themselves not as quasi-public officials and custodians of a great public trust but as the representatives of a private industry with no other responsibility than one to their investors. There is reason to believe that if the two motives of profit and public service cannot be harmonized, the alternative may ultimately be government ownership and control of the whole industry.

People in this country as well as in most others are loath to adopt this alternative. Whenever they have done so it has almost always been due to abuses on the part of private management in the treatment of its public. Either inefficient and inadequate service or high charges or both lie back of nearly every move that has led units of government into ownership and operation instead of regulatory control of public utilities.

The electric power industry has such large potentialities for the transformation and benefit of the country that its development and control are important to all citizens. The industry is at present making certain claims upon the public, which, if granted, will determine the amount of social benefit to be derived from electricity in this country for many years to come. To explain in what ways those claims constitute a crisis in public control of the industry and to consider the relative social effectiveness of certain other forms of social control, is the purpose of this study.

ELECTRICAL UTILITIES

*The Crisis in Public Control*

PART I





# ELECTRICAL UTILITIES

## THE CRISIS IN PUBLIC CONTROL

### CHAPTER I

#### CONTROL THROUGH PUBLIC SERVICE COMMISSIONS

PRACTICALLY all the effective control exercised over the power industry at present lies with the state regulatory commissions. They have at various times during the past twenty years been given authority over most of the public utilities. The claim that they have succeeded in protecting the public interest adequately is the foundation creed of those opposing any change in control. The claim, on the other hand, that the power companies have "learned how to regulate regulation," is the cause of much of the current agitation for a change in the system of control.

In considering the present status of the state regulatory commissions the questions which arise from a functional study such as this are: What were they supposed to do? How well have they done it? Has the situation changed in any way so that new tasks confront them? In that case, how well do they meet the new tasks? In case of any failure to meet such new tasks, is the difficulty with the personnel or procedure of the commissions, or is it beyond their own control?

The principle that industries involving the public welfare to an unusual extent can be regulated by the government has become almost universally accepted in this country. It was formally established with the decision of the United States Supreme Court in *Munn vs. Illinois* in 1876,



although regulation of various sorts had been attempted for the half century previous to that.<sup>1</sup> It was in this decision that the Supreme Court ruled for the first time that regulation in the interests of the public welfare was consistent with the Constitution.

#### DEVELOPMENT OF PUBLIC SERVICE COMMISSIONS

The modern method of regulation, known as public service commission regulation, has been adopted in forty-seven states.<sup>2</sup> Its main principles have been applied by Congress in creating the national regulatory bodies such as the Interstate Commerce Commission. This type of supervision has evolved slowly but surely during the past century. Early in the nineteenth century it became apparent that competition, the key principle of the *laissez-faire* doctrine, was inadequate as a safeguard of the public interest especially when the peculiar type of enterprise known as public utilities was concerned. Not only was competition in that field of doubtful value from the point of view of the consumer but also from that of the enterprisers themselves. It was early demonstrated that quasi-public services in order to be efficient and successful must be carried on under monopolistic or near-monopolistic conditions.<sup>3</sup> When this truth was generally accepted, efforts were made to do away with ruinous competitive practices. The problem of regulation began. It was clear that if competition could not be relied upon to secure good service and fair rates for the consumer, some supervisory control on the part of the state would have to be created in the public interest.

<sup>1</sup> *Munn v. Illinois*, 94 U. S. 113, 24 Law. ed. 77.

<sup>2</sup> Delaware is the only state which does not have a commission.

<sup>3</sup> Quasi-public services include electric light and power, gas, express, telephone, telegraph, and street railway companies, etc.

## LOCAL REGULATION OF PUBLIC UTILITIES

The early attempts to secure this control were made by local authorities. Through the medium of franchise agreements with the utilities, or even through municipal ordinances, the local governments attempted to set up standards of service and rates. The former were in the nature of contracts enforceable against both parties to the agreement and destined to hold for a certain definite number of years. Naturally revisions in the contract agreement were frequently made necessary by changed conditions, and difficulty was often encountered in attempting to make such revisions. Thus the inelasticity of the franchise agreement was a decided weakness in the method. Then, too, local officials were not always alive to the needs of a given situation. To this must be added the tale of corruption and graft which blackened the early history of American municipalities. The buying and selling of franchises constituted one of the most lucrative sources of illegitimate gain. All in all, local control, although appealing to a certain civic enthusiasm, was not a success. It was gradually abandoned in favor of state control. Adherents to the policy of local control may still be found, but they are few.

## REGULATION BY DIRECT LEGISLATION

One characteristic of the utility enterprises which made local control less efficient was the fact that utility companies did not confine their activities to one locality but often extended into several. This was especially true with the railroads. The railroads really hastened state regulation because local authorities were helpless as far as this new enterprise was concerned. The industry grew at such a pace that it was not long before it had gone even beyond state boundaries and the national government was forced

to become directly involved. At all events, the railroads were not amenable to local jurisdiction. Direct action on the part of the state legislature was therefore taken. As a consequence, statutes upon statutes were passed in nearly every state throughout the first half of the nineteenth century. During the 1870's when popular agitation grew to white heat some very stringent laws were passed. By the time of the decision in *Munn vs. Illinois* nearly every state was attempting to regulate standards of service, fix maximum rates and supervise the financing of the railroads through direct legislative action. This method was certainly more successful than local control had been.

At the same time, however, it was not so completely successful as to give general satisfaction. In the first place, the process of regulation is a continuous one whereas the legislatures met only a few months a year and in some states only once in two years. That is to say, for a great portion of the time there was literally no regulation other than that secured by the governor or his subordinates acting upon the authority of the statutes. Regulation as to rates, service and financing is also a technical task which requires a considerable amount of skill, knowledge and time on the part of those charged with the responsibility. The average legislator could not qualify in this regard. Hence at two vital points at least direct legislative action was seriously deficient. It was to remedy this situation that the plan of commission control was adopted.

#### EARLY RAILROAD COMMISSIONS

The first commissions appointed were created as railroad commissions rather than for general supervision over all utilities. The New England states led the way.<sup>4</sup> The

<sup>4</sup> Rhode Island, 1836; New Hampshire, 1844; Connecticut, 1853; Vermont, 1855; and Maine, 1858.

commissions created in those states early in the nineteenth century were, however, not regulatory bodies but were set up as fact-finding agencies. Other states rapidly followed the lead thus set and created similar commissions designed to secure information upon the basis of which the legislature could act. The movement was accelerated considerably by the Granger decisions.<sup>5</sup> Between 1890 and 1902 many of the states very materially increased the powers of the railroad commissions and gave them considerable authority over standards of rates, service and financing, matters which had before been the subjects of direct legislation.

#### THE PUBLIC SERVICE COMMISSION

By 1900 it had also become apparent that the state would have to supersede the locality as the regulator of public utilities other than the railroads. Water, gas, electric and street railways were increasing in size and importance and were rapidly outgrowing the boundaries of local jurisdiction. It is not surprising therefore to find that between 1900 and 1907 the states began to place these enterprises under the control of the railroad commissions. As a result it may be said that the modern period of commission regulation began in 1907, about which time many of the states renamed their railroad commissions, calling them public utility or public service commissions, and nearly all gave to them authority over all quasi-public businesses.

In that year Wisconsin and New York established utility commissions with general powers of supervision over utilities which previously had been subject to local regulation. Georgia in the same year extended the jurisdiction of its

<sup>5</sup>The Granger decisions were seven cases decided by the Supreme Court in 1876 upholding the power of the legislature to regulate railroads and other public utilities.



railroad commission to enable it to deal with other forms of quasi-public enterprise. In 1908 Vermont replaced its railroad commission with a public service commission. New Jersey swung into line in 1910 by creating a commission. It greatly extended its authority in 1911. In the latter year New Hampshire, Kansas, Ohio, Washington, Connecticut and Nevada established public service commissions, in each case substituting the new commission for the limited railroad agencies. Rhode Island, Oregon and California followed the same course in 1912. In 1913 Indiana, Illinois, Colorado, Missouri, Montana, Idaho, Pennsylvania and West Virginia added eight more to the list of sixteen which were already in existence. Thus the movement spread until about 1921 when each of the states with the exception of Delaware had created a commission with some powers of control over some utilities. Since that date changes have been made in many instances with reference to the organization, powers and duties of these commissions. In general these changes have operated to increase their authority and extend their jurisdiction.

#### JURISDICTION

The jurisdiction of the commissions is usually definitely set forth in the statutes. Public service control is ordinarily extended over railroads, street and interurban railways, bus lines, telegraph and telephone companies, gas and electric companies, water companies when under private management, pipe lines, etc. Although jurisdiction over electric light and power companies has usually been given to the public service commissions, yet seven of the forty-seven states with commissions have not done so.<sup>6</sup> In other words, this industry is not subject to commission control in Del-

<sup>6</sup> For jurisdiction of the several public service commissions over the light and power companies, see Table I in Appendix.

aware, Florida, Iowa,<sup>7</sup> Kentucky, Minnesota, Mississippi, South Dakota and Texas. This, then, represents the weakness in public service commission regulation as viewed from a national point of view. The most obvious weakness is the lack of jurisdiction over electric light and power companies in eight states. In addition the Colorado commission does not have jurisdiction over utilities in home rule cities; the Arkansas commission has limited authority where municipal councils and city commissions have precedence; in Kansas the commission has limited jurisdiction in cities; the same is true of Louisiana, Nebraska and New Mexico; and in West Virginia the commission has control over water power companies alone. Thus there are fifteen of the forty-seven states in which the jurisdiction of the commissions over this particular industry is either totally lacking or limited in some degree.

There is another limitation upon the jurisdiction of the commission which in some cases makes real control impossible. This limitation is due to the time at which the jurisdiction of the commissions first becomes effective. It is clear that if an electric company does not come within the jurisdiction of the commission until after the plant is constructed and is ready for operation, the commission will not have been able to supervise the financing of the project nor in fact to determine whether all parts of the plant were necessary or not. If a company can escape public regulation until it is ready to begin operation, it cannot be said to have been regulated in a thorough manner. In general this is the situation in which most of the commissions find themselves.<sup>8</sup> Some states have remedied this situation by

<sup>7</sup> Iowa commission does have jurisdiction over transmission lines outside the cities.

<sup>8</sup> In only five states (Arkansas, New Hampshire, Vermont, West Virginia, and Wisconsin) does the public service commission have control over the development of water powers. In all other cases development of water

providing separate agencies to supervise operations during the construction period. This seems to be the most effective arrangement because of the fact that such control involves a type of supervision for which an additional staff would be required.

#### ORGANIZATION AND PERSONNEL

As is evidenced by the table to be found in the Appendix, there are decided differences between the commissions in the various states as to title of the commission, mode of selection, number, salary and term of office of the commissioners. The difference in titles is not particularly important although it does indicate to some extent different attitudes as to the emphasis of regulation. The majority of the commissions are called public service commissions, public utility commissions or railroad commissions. The first two types in general have a wider jurisdiction than the latter although that is not always the case.

In twenty-seven states the commissioners are appointed. Usually the appointment is made by the governor by and with the consent of the Senate. In South Carolina the legislature selects the appointees. In the other twenty states the commissioners are elected by popular vote. Every state south of Virginia, with the exception of South Carolina, relies upon the elective process, as do several of the midwestern states. In the New England and Middle Atlantic states the appointive method prevails.<sup>9</sup>

Thirty-six of the states have provided for commissions of three persons, thus making the small commission the

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powers is regulated by direct legislative action or in a few states by special water power commissions or else not regulated at all. All states in which the commissions are not allowed to issue "certificates of convenience and necessity" of which there are seventeen, and all states in which the commissions do not regulate security issues of which there are twenty-two, must be said to be in this class.

<sup>9</sup> For details of appointment, tenure, salaries, etc., see Appendix Table II.



prevalent type. Eight states have selected five as the desirable number. The public service commission of New York is one of these. The transit commission of the same state has three members. Pennsylvania, Illinois and South Carolina have commissions with seven members.

The average term of office is six years. Twenty-nine states have adopted this term. South Carolina and Arkansas have the lowest with two-year terms, and New York and Pennsylvania top the list with ten-year commissions. The other states have various periods, the four- and seven-year terms being most popular. Washington is unique in providing that the commissioners shall serve at the approval of the governor. This provision entails an indefiniteness to the term which is not particularly desirable.

In salary the states show an even greater disparity. They range from \$2,250 in Mississippi to \$15,000 in New York. The average is about \$5,000 indicating that the commissioners are well-paid as compared with the salary scale for public officials in general. At least the legislatures of the states have appreciated the fact that the task of regulation demands able commissioners and have set up their salary scale accordingly. It cannot be said that commissioners as compared with other public officials are *underpaid* except in one or two cases. The usual practice is to allow an additional \$500 or \$1,000 for the chairman of the commission as compensation for the added responsibilities.

#### QUALIFICATIONS FOR COMMISSIONERS

Few of the public service laws outline the qualifications to be possessed by a commissioner. In such a situation it is inevitable that the practice in the several states should be anything but uniform and consistent. In those states in which the appointive method has been adopted the character of the selections to the commission will depend

almost entirely upon the point of view of the governor. Where popular election is the rule, however, one cannot generalize even to that extent. Undoubtedly in such cases "availability" and "vote-getting" power will constitute the essential qualifications for the office. Despite this apparent lack of an accepted standard for commission personnel, a few tentative observations may be made.

In the main the majority of the commissions including the more successful ones have been composed of men who were not technical experts. There have been relatively few engineers and accountants on the commissions although the questions requiring settlement involve those two special fields to an extreme degree. The prevalent idea seems to be that the commissioners should be able men with a record of experience in general business administration. A high degree of administrative talent rather than a special aptitude in a limited field of knowledge seems to find greater approval under both methods of selection. Lawyers are particularly favored. It has been estimated that fully 50 per cent of the commissioners are attorneys by training and profession. That there is some reason for this must be admitted. Being trained in the law such commissioners are versed in the technique of conducting hearings, of evaluating evidence and of interpreting the statutes upon the basis of which the commission functions to a greater degree than the ordinary business executive. In addition most lawyers have had business experience.

However it is probable that the real reason for the large number of commissioners with a legal background is to be found in the fact that the profession offers a larger proportion of men who are at once influential in politics and also to some degree qualified for the position. This rather than any special professional aptitude may be considered most important. At all events the lack of specialization

and reliance upon general ability seems to be one principle which has evolved from public service regulatory practice.

Another principle usually insisted upon is that the commission shall be bipartisan in political complexion. This is not generally so true of elective commissions as of the appointive ones. It operates usually to give the commission a certain political status which would not be found if all appointees were selected from one party.

Beyond these two general practices there seems to be little which can be extracted from the history of commission practice as far as qualifications for office are concerned. Needless to say, political considerations are still of greatest influence in determining personnel policies. Such a situation is of course unfortunate. The problem of regulation of public service enterprises is difficult enough to require the services of men peculiarly fitted for the task. Objective tests of such fitness have not been devised. To be successful at his task the commissioner must possess a broad understanding of what constitutes public welfare and the relation between it and public utility enterprises. He must be a socially-minded individual who views modern problems from the point of view of modern social conditions. He cannot rely upon eighteenth century social and economic theories and expect to cope successfully with twentieth century social and economic facts. There is no group among the citizen body which can claim a monopoly of these characteristics. There is no course of training which is guaranteed to develop them, and no college degree can attest to their possession.

#### THE STAFF

In nearly every case technical matters are handled by the staff rather than the commissioners themselves. To

a greater or less degree each state has provided its commission with a staff organization including engineers, attorneys, accountants, economists, secretaries, stenographers and other necessary special assistants. The burden of investigating utility companies falls upon this group and the commission itself relies upon its staff for the facts upon which to base its decisions. In general it is true that the commissions are understaffed. They do not have a sufficient number of responsible staff officers to enable them to dig out basic and pertinent data to the extent which would be desirable. This seriously curtails the efficiency and effectiveness of the regulatory bodies.

The staff is theoretically supposed to consist of a group of permanent officials whose appointments depend upon special fitness rather than political favoritism. This is not always the case in practice but probably has prevailed as much with reference to the commission staffs as with supposedly permanent employees in other branches of the government. It certainly is almost essential to have a permanent staff of technicians when it is considered that the commissioners themselves owe their positions to party politics and are selected (in many cases) for short terms of office.

This difficulty of the commissions in securing adequate staff at competitive salaries is peculiarly important because in the absence of proper supervision the utilities are practically free to charge all their accounting and engineering expenses to the consumers. There is no limitation on them of any importance while the regulatory body is hampered by the fact that it is, except in the cases of Vermont and Tennessee, dependent upon funds furnished through state taxes. In these two states the expense of regulating the utilities is charged against the utilities, and through them to the consumers, exactly as the companies charge the consumers



whatever expenses they have in connection with the state commission.

Analysis of the ordinary commission budgets for the year 1926 shows that of the 39 states regulating the power industry in this way, 13 states spent under \$50,000 a year for all utility regulation, 12 spent between \$50,000 and \$100,000 a year, 8 spent between \$100,000 and \$200,000, while the following six states of New York, New Jersey, Pennsylvania, Illinois, Wisconsin and California spent between \$200,000 and \$673,000. This does not include special appropriations for unusual work. Vermont, for example, which is in the first group with a budget of \$16,000, charged its utilities in 1926 with the unusual sum of \$200,000 for the services of an engineering firm on valuation work. These 39 states spent in that year on all their utility regulation by commission the sum of \$4,927,574, an average of \$126,350. Of this perhaps one-third was devoted to the regulation of power companies. It may be estimated that the states spend under \$2,000,000 annually in this phase of regulation. This figure becomes significant when the expenses which some large single company, such as the New York Edison, will charge up to the consumers for its own expenses in regulation. It is reported that in a case brought by the City of New York for lower rates in 1925 the company has already spent over \$4,000,000 in accounting, engineering and legal fees. The bulk of the expenses in conducting this case for the company were not borne by the state commission but by the City of New York.

Although this case must be looked upon as an extreme example it explains in part the difficulty and unwillingness of the under-financed Commissions to contest cases before the Courts. The increased resources and power of utility companies, the result of combinations and mergers, put them in a position to contest decisions of the commissions in a

way they were not able to do in earlier years. This is one of the new circumstances facing the commissions and thus the whole system of state regulation.

THE NATIONAL ASSOCIATION OF RAILWAY AND PUBLIC  
UTILITIES COMMISSIONERS

The early railroad commissioners felt the need for some organization which should serve as a clearing house of ideas and information relative to their special functions. Commission regulation was then somewhat of an experiment. The commissioners, lacking definite legislative guidance, were forced to feel their way in a new field. They became convinced that some national organization of all of the state commissioners would aid them materially. Accordingly in 1888 the National Association of Railway Commissioners was established. With the extension of the jurisdiction of the commissions to include other kinds of utilities the need for enlarging the national organization was felt. In 1917 this voluntary national association was reorganized and became the National Association of Railway and Utilities Commissioners. Every member of a state public service commission is eligible for membership in this body. Some of the permanent staff members of the commissions are also entitled to membership if they so desire. This organization holds annual conventions at which outstanding problems of utility regulation are discussed. Standing committees are appointed at each annual session to study developments in a particular phase of the work and to report at the next annual meeting.<sup>10</sup> The

<sup>10</sup> These committees are appointed to consider such subjects as:

- Express and other contract carriers by rail
- Safety of railroad operation
- Railroad service accommodation and claims
- Grade crossing and trespassing on railroads
- Railroad rates
- Statistics and accounts of railroad companies



leading men in the field of regulation as well as the leaders in utility corporations are invited to address the commissioners on these occasions. The proceedings including addresses and reports are compiled and published in an annual report of the convention.

The aim of this organization is to provide the opportunity for joint consideration of vexing questions with which the commissions in all the states have to deal. Based upon the assumption that the underlying principles of utility regulation are or should be uniform in all the states, the hope is that a discussion of these principles will tend to produce that uniformity.

One of the problems upon which this organization has looked has been accounting procedure. The result of this activity was the development of a uniform classification of accounts which has been adopted by the commissions in twenty-seven of the states. New York is one of them. Clearly this work is decidedly worth while since a uniform method of accounting control will make possible a basis for comparative analysis of state regulation. Some discussion has also occurred relative to the possibility of securing the enactment of a uniform public service commission law. This again is certainly a legitimate field of effort for such an organization. By using these annual reports and discussions as the basis of a critical survey of existing statutes in the various states, improvement may be brought

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Car service and demurrage  
Public utility rates  
Service of public utility companies  
Valuation  
Safety of operation of public utility companies  
Statistics and accounts of public utility companies  
Capitalization and intercorporate relations  
State and federal legislation  
Public ownership and operation.

about in those states which have lagged behind in effective regulatory practice. This organization may become a most potent agency for effective reform and improvement in the methods and practices of commission control. Its members are in the midst of the problems and difficulties connected with it. Surely they are in a position to understand the defects and limitations of the present type of control. Theoretically at least consumers might look to this organization for guidance in the field of constructive legislation on the utility question. Potentially it is a body which can render real public service. To date, unfortunately, it has not adopted a critical attitude toward the present type of control. In reading the annual reports one is struck with the lack of discernment in passing judgment on defects and limitations of the existing methods of regulation. The organization seems to show the same weakness of many other professional associations. That is to say, it has apparently tended to become more of a self-regarding agency interested primarily in improving the status of its own members.<sup>11</sup> Its discussions of current problems are almost without exception conducted from the point of view of safeguarding the position of the public service commission. Its members strenuously protest against any reduction of authority of the public service commissions or any transfer of this authority to other bodies.<sup>12</sup> How will it affect our positions and prestige and not how will it benefit the public?—this seems to be the point of departure in too many cases. This, of course, is to be expected. But certainly it limits the value of the organization as a generally constructive and useful agency. It cannot be denied that the association has great potential value, but to date its social usefulness has been limited.

<sup>11</sup> Report of the National Assn. R. R. & P. U. Comm., 1926.

<sup>12</sup> *Ibid.*, 1927, p. 98.

## TECHNIQUE OF CONDUCTING CASES

Proceedings before the public service commissions are usually conducted with all the formality and dignity of a judicial trial. Access to the commissions cannot be secured in any free and easy manner. Although the source of some popular criticism, this procedure is necessary to some extent because of the pressure of business. Informal, unsupported complaints cannot be accepted by the commission.

A case may be initiated by any corporation, municipality, a group of persons, etc. Rate reduction cases are usually initiated under the auspices of a city administration or perhaps an association of citizens, while petitions for increases in rates are of course presented by the utilities themselves. A formal complaint must be properly filed including the petition for commission action. This must then be supported by affidavits purporting to show what the actual facts of the situation are. The complaint is filed by the commission and if initiated by a municipality or group of citizens is forwarded to the utility concerned, and vice versa. The defendant party makes a formal answer to the same which is also supported by affidavits. The case is then ready for consideration. A date for a hearing is set by the commission and one or more commissioners are detailed to take the evidence and hear the case. In unusually important cases the whole commission may preside.

At the hearing the party making the complaint presents its case through an attorney. Witnesses are examined, evidence such as accounts, reports, etc., is introduced and experts are heard. The whole procedure is at every turn subject to the watchful eye of the attorneys for the opposing party and the witnesses are subjected to cross-examination. After the complainant presents his case the defendant

party has a similar opportunity and witnesses, experts and evidence favorable to the other side are presented. Each commission has elaborate rules and regulations governing the conduct of hearings. These are rules of evidence and methods of procedure as definite and as stringent as those applying to courts of law. In fact there is a great similarity between a commission hearing in an important case and a lawsuit before a court of record.

After the hearing has been held the commission takes the matter under advisement. In case there are some points which have not been settled to the satisfaction of the commission it may order its staff to make an independent investigation. When the commissioners have reached an agreement, or rather when each commissioner has decided as to his verdict, the decision may be rendered. A majority vote of the commission determines the decision as in the Supreme Court of the United States. One commissioner is selected to write the opinion either dismissing or sustaining the complaint as a whole or in part. In cases in which there is a sharp difference of opinion between the commissioners a dissenting opinion may also be written.

The decision rendered by the commission represents their interpretation of the law regulating public utility enterprises as it applies to the facts of the situation with which they have been made familiar. In important cases a decision is of course awaited with much interest by utilities not immediately involved because, as with judicial decisions, the principle of "stare decisis" or the practice of following precedent is quite common. It is therefore of considerable importance for all concerned that a decision in an important matter shall be just and reasonable. Because of the publication and reporting of important decisions rendered by public service commissions all over the



country a formidable body of precedent is slowly developing.<sup>13</sup>

This is a brief outline of the procedure usually set forth in the public service laws. Unfortunately there are several serious defects which have appeared in this regard as a result of commission practice. Some of these will be mentioned at this point. There is no question but that such defects have operated to prevent a fair degree of effective operation.

#### CRITICISMS OF COMMISSION PROCEDURE

In the first place, in nearly all states the commissions may not begin cases on their own initiative.<sup>14</sup> They must wait until a case is brought by some person, corporation or municipality. When one considers that the cost of initiating and carrying through a complaint which is contested by the companies may be anywhere from \$20,000 to \$150,000 or more it becomes clear that few individuals and even few municipalities can afford this expense no matter how sincere their desire for an investigation. This financial barrier results in the perpetuation of many socially undesirable situations. The limitation of the province of the commission to cases initiated by others acts as a check upon their effectiveness. In addition, some states do not permit their municipalities to initiate proceedings except under very special conditions. Such restriction means that private individuals alone are able to start proceedings on the public side. In view of the financial burden thus entailed it is not surprising that people in many states are

<sup>13</sup> Decisions are reported by the Public Utilities Reports, Inc., of Rochester, N. Y., and Washington, D. C. H. C. Spurr, Editor.

<sup>14</sup> This is clearly a limitation upon the authority of the commission but is so intimately bound up with the question of procedure that it is included at this point.

coming to believe that the public interest is not adequately safeguarded under public service commission regulation.

#### ACCENTUATION OF THE JUDICIAL FUNCTION

This tendency might be described as an increasing emphasis upon the judicial nature of the work of the commission with a consequent diminution of its purely administrative aspects. Not clearly defined, it is nevertheless present in the development of commission control. Quibbling about separation of powers is of course futile for it is quite impossible to imagine any governmental department which could be *purely* legislative or administrative or judicial. It is clear as outlined by Bauer in his work on public utility regulation that a public service commission has legislative, administrative and judicial functions. As an administrative body it is charged with the responsibility of applying the law including its own rules and regulations to specific cases and of enforcing its decisions. Since its findings as to rates and rate policies have the force of law it becomes in the exercise of this function a legislative body. In its judicial capacity it must be aware that investors as well as consumers have an interest in regulation and that in case of conflicting interests it must decide between rival claims with an impartiality and fairness characteristic of judicial bodies.<sup>15</sup> Bauer points out that a conflict has developed between the several functions of the commission to the detriment of good regulatory practice. In this conflict a grave danger can be seen. Or putting it in another way, it is in the overemphasis upon the judicial aspect of the work that one possibility of failure of commission control may be seen.

The commissions were not established primarily to decide

<sup>15</sup> John Bauer, *Effective Regulation of Public Utilities* (New York, 1925), pp. 357-362.



conflicting claims according to law as were the courts. Rather they were set up definitely as agencies designed to aid the legislature in the development of policies and the administrative control of utility regulation. It was assumed that the courts would be adequate to protect the utilities from unwarranted interference, from unfair discrimination or from confiscatory rates. But the commissions have become more concerned with the impartial settlement of conflicting claims and by the same token less persistent and interested in uncovering abuses and practices not conducive to public well-being. The commissions' inability in some cases and unwillingness in others to initiate proceedings and investigations on their own initiative is indicative of this change.<sup>16</sup> Some publicists defending the commissions point to this development with extreme satisfaction.<sup>17</sup>

This tendency cannot be regarded with equanimity when the problem of regulation is viewed from the standpoint of public welfare. Such withdrawal of the public service commissions from the field of active and at times militant supervision to an impartial plane of judicial service leaves the public without the effective guardianship to which it is entitled. It leaves no agency or department of the government directly responsible for the investigation of conditions and the presentation of evidence where the public welfare is endangered. As we have stated before, the financial burden of this task is so great that it can be borne only by some division of government. The withdrawal of the commission from this field removes the only state agency competent to undertake the responsibility. The municipalities alone are left. Where they are prohibited by law from exercising this function or where small cities with limited

<sup>16</sup> *Ibid.*, p. 359.

<sup>17</sup> For example, Henry C. Spurr, Editor of Public Utilities Reports, Inc., indicates his approval of this trend in his *Guiding Principles of Public Service Regulation*. Rochester (1924-25), Vol. I, pp. 6, 7.

revenues are involved or in rural and country districts under any circumstances, there is no one single public officer or public agency which can be relied upon to furnish the legal and expert talent necessary to wage battle in the public interest.

Not only does it happen that legal and expert testimony is often lacking, but on occasion public agencies themselves are denied a hearing. In the recent case before the New York Public Service Commission involving a merger of the Consolidated Gas Company and the Brooklyn Edison Company, this tendency was illustrated in a striking way. In this case the Public Committee on Power, a voluntary association of citizens and consumers created to develop public support for a certain water power policy, desired to have its representative question witnesses and otherwise participate in the public hearing held by the commission. This direct participation in the hearing was refused although the organization was allowed to submit a brief. Commissioner Prendergast, the chairman, ruled that the organization was not a "proper party" to the proceeding. That is to say, it did not have a property right involved in the case. He stated that a "public hearing," as described in the law, meant only that the evidence would not be taken in suit and did not mean that anyone could appear and be heard. Only "proper parties" to the proceeding might participate. Governor Smith was appealed to by the organization. He requested the commission to reopen the hearing, but the committee was not allowed to present its objections to the merger. Here was a situation in which an admittedly responsible public association composed of prominent men and women, many of whom are active in public affairs, was denied the right to participate directly in a commission hearing involving a question in which the members of the association as consumers were peculiarly

interested. Not only is it quite possible that some valuable information might have been submitted, but more serious is the precedent that voluntary public associations working for the public interest and welfare shall not be accorded reasonable opportunity to participate in a public service commission hearing. Action of this character does much to discredit the effective functioning of the public service commissions.

Since the commissions have become inactive in initiating and prosecuting cases, it is especially important that the public should not be denied at least the same facilities and opportunities for presenting its claims as the utilities have.

#### DIFFICULTIES RESULTING FROM THIS TREND

There are four major difficulties which arise from this new trend on the part of the commissions toward a judicial rather than a participating policy. The more the commissions tend to discard their original function of public protection and drop into the attitude of judging the protests brought before them, the more important these difficulties will become. They have been frequently discussed by municipal officers and others, among these Mr. Ernest Bradford, a consulting economist.<sup>18</sup>

(1) The first is the lack of experience which the ordinary city attorneys, members of the staff of the corporation counsel, bring to utility work. Mr. Bradford points out that this fact has frequently impaired the strength of the public's case and has presented the utilities with a decided advantage. The utilities are always able to secure, and pay well, highly trained legal talent, schooled and developed in similar cases in other parts of the country.

<sup>18</sup> Compare Morris L. Cooke. *Public Utility Regulation* (New York, 1924), p. 243.

It is almost as amateurs against professionals that the legal representatives of the cities go forth to contend for the public's cause. Unless bolstered by special assistants whose services are expensive, to say the least, the usual city attorneys are no match for the utility representatives. Then too it must be remembered that the terms of office of city attorneys are relatively short. The result is that the representative of the city will often be removed and another take his place during the progress of a single case. It is not difficult to understand, therefore, how important it is that the commissions retain in part at least a semblance of their original character and assist the city attorneys sufficiently to guarantee that the public's case will be presented with all the force and thoroughness that it is possible to muster.

(2) A second glaring weakness which has been noticed in commission procedure and which will assume dangerous proportions if the commissions are to be merely impartial arbiters is the difficulty of securing the assistance of experts on the public side. As stated by Mr. Bradford: "Most of the engineers and accountants experienced in electric lighting, gas, water and other utilities are in the employ of private companies or expect to be so employed and for that reason they are unwilling to appear on the public's side." He quotes those charged with presenting the public's side in all the more important Pennsylvania utility cases as expressing the same opinion. Since the commissions are designed to protect the public welfare, the question naturally arises as to why it is not proper for them to detail some of their technical staff to serve as experts for the public's side of the case. The tendency of the commissions to withdraw themselves and their staffs from active public support does not tend to increase their usefulness.



(3) A third discrepancy between public and private facilities in presenting cases is in the matter of funds available for the presentation of evidence. In the conduct of cases in Pennsylvania it was shown that the utilities have spent four times the amount expended by the public agencies for the same cases.<sup>10</sup> This expenditure of the utilities was in addition to the efforts of regular employees carried on the payroll at all times. This discrepancy is not to be accounted for by the fact that such disproportionate amounts were needed by the utilities to present their claims. It is due largely to the fact that it is relatively difficult for the public agencies to raise the necessary amounts. Municipalities operating on a limited budget basis are usually unable to provide the necessary money at the time it is needed and the contesting of cases which have to depend upon voluntary contributions from citizens would not get very far. On the other hand, money expended by the utilities for such purposes, except in cases of obviously excessive payments, comes back to them in rates collected from the consumers because "regulatory commission" expense is allowed by nearly all the commissions as a legitimate item of operating costs.

Again, some public agency is necessary which is equipped with the staff and the money sufficient to present the public's case in its most favorable light. It is no doubt true that the present budgets of the commissions would not allow them to aid materially. But this is no argument in favor of commission control. It is merely one more indication that dependence upon commission regulation alone is an unsatisfactory policy as commissions are now functioning.

(4) A fourth point at which the public would be inadequately supported if commissions were to withdraw en-

<sup>10</sup> Morris L. Cooke. *Public Utility Regulation*, p. 243.

tirely to the judicial plane is in the matter of access to books and records of the utility companies by the representatives of the public. Obviously the records of the utilities should be open to examination by the responsible public officials at all times. On not a few occasions such access has been refused. Usually the commissions are then appealed to for an order forcing the companies to open their books for inspections. Without assistance of this nature from the commission the public's case suffers considerably.

Certainly enough has been said on these points to illustrate the necessity of curbing the prevailing trend toward a more judicial status on the part of the commissions. It is a question whether they have not already gone so far in that direction as to make them more or less impotent as effective agencies of public control. If the commissions are allowed to assume the status of courts and to neglect the function of actively seeking to prosecute infringements on the public welfare, some other form of control must be devised either to supplement or to supplant commission control. A thorough overhauling of commission procedure might, however, secure the desired results in this respect.

#### POWERS OF THE COMMISSION

The purpose of public service commission regulation is to secure protection to the public from unfair, discriminatory and monopolistic practices which would be prejudicial to the public welfare. Such protection is designed to cover four major responsibilities of the commissions. The four phases may be listed as: (a) maintenance of standards of service, (b) control over accounting, (c) supervision of financial policy including security issues, (d) control over rates. The discussion of the exercise of the legal authority of the commissions will consequently be treated under these



four main headings and will apply only to the forty commissions with authority over electric companies.<sup>20</sup>

#### CONTROL OVER SERVICES

Regulation of rates, which is the fundamental reason for public regulation, is meaningless without supervision over service standards. Rates taken by themselves cannot be considered reasonable or unreasonable while rates considered from the point of view of the service rendered have real meaning for the consumer. He is interested in receiving dependable service of a consistently high quality. Once that is secured he then desires to pay no more than is necessary for that service. So it is that each of the forty state commissions with authority over electric power companies has the legal power to supervise service. This includes the power to set up standards and to create inspection facilities which are designed to guarantee the maintenance of the standards established. These standards apply to both the quantity and quality of the service rendered. Under this authority many of the commissions have promulgated elaborate codes of rules and regulations setting forth the obligations of the company in this regard. This power is almost absolute. It even includes the authority to order improvements and additions in the physical plant of the utility when it is apparent that such additions and improvements are necessary to secure reasonably efficient service.

In addition to this, the commissions have considerable power to supervise and in some cases to require extensions of service to areas not already equipped with it. This power is, however, far from absolute. Likewise in general the areas of service cannot be extended without commis-

<sup>20</sup> *Saratoga Springs v. Saratoga Gas, etc., Co.*, 191 N. Y. 123, 83 N. E. 693 18 L. R. A. 713.

sion consent. Twenty-six states allow their commissions to grant or refuse what is known as a "Certificate of Convenience and Necessity" before an extension of service can be made. They also have some jurisdiction over the withdrawal of a utility from a particular area. At all events control over service is recognized as a very important feature of commission control.

Speaking generally, this phase of the work has been relatively more effectively handled than others. The measurement of service is well supervised. The location, accuracy and testing of meters is a regular function of the commissions' staffs. Further, all the requirements relative to payment for service, such as the forms of accounts, bills, etc., are prescribed with reasonable effectiveness. The commissions have done some excellent work to the end that the service shall be reliable and of good quality and quantity.

#### ACCOUNTING

It is obvious that it would be impossible to determine a fair rate or effectively to supervise financial operations without a standard scheme of accounting for each state which would set forth in a regular manner the facts upon which rate making or fiscal control must be based. The accounts should show among other items the actual investment in the utility on which the stockholders are entitled to a return, the costs of operation and the revenues derived from operation. All of these facts are essential. Despite the truth of this statement seven of the forty commissions with authority over light and power companies have not been given the authority to supervise the accounting of these companies and the Oklahoma Commission has only a limited authority. This means that in the seven states in which the commissions do not control electric companies, in the

seven other states in which the commissions cannot supervise accounting, in South Carolina where the commission cannot prescribe accounting classifications and in Delaware where there is no commission, effective regulation of light and power companies must be considered inadequate from the outset. In other words, only thirty-two states have authorized their commissions to control the accounting of the utility companies in all its phases. Yet even in these states control of accounting methods has not been altogether successful.

The provision of a system of accounting is only the initial step. That the utilities follow the "form" means only a little more. The real question is whether the accounts, with respect to individual entries, conform to the requirements of the system. The investigations of the Federal Power Commission's accountants show in many instances lack of compliance with current accounting standards.<sup>21</sup> The state commissions make no audits except in specific cases, and it may then be too late to discover or correct errors unintentional or otherwise. Failure to supervise the accounts of utilities is one of the primary weaknesses of state commissions.

In addition to these unfortunate limitations on the authority of the commissions, in none of the states is there any control whatever over the accounts of holding companies. Often such accounts are scattered here and there in the head and branch offices of those organizations which are located in various parts of the country and are frequently found with difficulty even by federal agencies.<sup>22</sup> In general supervision by the public service commissions

<sup>21</sup> Federal Trade Commission report, 1925, p. 5.

<sup>22</sup> The above strictures on accounting control were made by accountants of the Federal Power Commission.

has improved but as yet is far removed from what might be termed adequate control.

#### FINANCIAL SUPERVISION

The second main concern of the commissions and one which has proved to be extremely difficult and involved is that of supervising the issuance of securities by the utility companies. It will be recalled that one of the grounds for popular protest against the methods in the late years of the nineteenth century was that many so-called railroad magnates were far more interested in "juggling" the financial arrangements of their companies to the advantage of their own pocket books than they were in running a railroad for public use and welfare. The same phenomenon has been perceived to a greater or lesser degree in other forms of the utility business. Thus it is not surprising that in many cases popular demand insisted that in setting up regulatory commissions the legislatures should endow them with power to curb irresponsible speculation.

In the states where such financial control exists the commissions are entrusted with the responsibility of preventing financial manipulations disadvantageous to investor and consumer alike.<sup>23</sup> This includes control over security issues to prevent overcapitalization and "stock watering" as well as manipulation of operating costs which would nullify all attempts to fix reasonable rates. This power has been granted to the commissions in only twenty-five of the states and there only over the issues of operating companies. The fifteen states in which the commissions have control over electric companies without control over financial manipulations are deprived of one of the most effective

<sup>23</sup> See William Z. Ripley, *Main Street and Wall Street* (Boston, 1927), for a comprehensive discussion of the whole problem of financial control of the utilities.



functions of regulation. But even in the case of the twenty-five equipped with the authority there is no guarantee that it will be exercised effectively. Several recent developments in the utility field tend to interfere seriously with the supervision over financial operations that was obviously intended in the law.

In the first place, many of the utility companies were established concerns with financial policies already in operation at the time the commissions were created and vested with authority over stock issues and financial policies. The situation was not as it would have been had the commissions been able to supervise the original financing. Unquestionably there were numerous instances of unsound financing in those early years of utility development.<sup>24</sup> The commissions have been unable to, or at any rate have not, readjusted these situations. It would have been a tremendous task to make a valuation of all going concerns at the time the commissions began to function. It is not surprising, therefore, that the commissions without adequate staff facilities and obliged to feel their way cautiously in an unexplored field were in most cases content to leave existing conditions alone and apply their efforts to the supervision of new security issues. Defensible as this may be, it nevertheless constituted a basic defect in control at the very outset. It means that in many cases the foundation of the financial structure is unsound with a corresponding lack of justice in the resultant rate-making process.

Within the limits of their statutory authority the commissions have done much valuable work with reference to subsequent security issues. They have attempted to prevent overissues of stock and have made strenuous efforts to keep "water" at a minimum. Despite this certain ob-

<sup>24</sup> Bauer, *Effective Regulation of Public Utilities*, p. 21.

stacles to real control have arisen. The most difficult barrier to effective control in this field is the holding company. The valuable place which this type of organization occupies in the utility field is described elsewhere.<sup>25</sup> It is mentioned here only as it relates to regulation. As already noted, in practically every case the commissions have no control over the holding company. It is not a utility. It produces no commodity and renders no direct service to the consumer. Thus the activities of these organizations are unregulated and uncontrolled except perhaps under the blue sky laws in some states. It has been stated elsewhere in this study that these organizations are often in bitter competition among one another for the control of the operating companies.<sup>25</sup> The effect which this has upon the price of the stocks of the operating companies is clear. This has an immediate effect upon regulation and rates at least in two directions. In the first place, it is evident that if the operating companies are recapitalized on the basis of the competitive price paid by the holding companies for a controlling interest in the stock rather than actual value, the future rate base may be abnormally high and rates may in effect become exorbitant. The holding company must secure a return on the money it has invested or spent to obtain control and it will consistently urge that the inflated value should be made the rate base. Previously the commissions have maintained this control by refusing to allow the inflated values to be figured in rate making. This reservation may slip away and the inflated values be included as a basis for rate making.<sup>26</sup> The effects of this change of policy may be readily forecast. It will mean that consumers must pay a fair return not only on actual investment or even reproduction of property at prevailing prices but also upon the

<sup>25</sup> See Chapter III for discussion of the holding company.

<sup>26</sup> See Chapter VI.



whole or part of the inflated purchase price of operating company securities paid by holding companies competing for control. This would obviously amount to a complete breakdown of commission control in so far as that aims at fair returns on prudent investment.

Another phase of holding company operation which seems destined to nullify the promise of commission supervision lies in the contract arrangements between holding companies and their subsidiary operating concerns. The practice for the holding company to contract with the operating company for the payment of certain sums of money from the latter to the former as costs for engineering, financial or managerial services rendered by the holding company provides a basis for "loading" charges in a way that may materially affect rates. Payments on these charges are entered as operating expenses in the reports of the operating companies. The commissions have no choice other than to accept them unless they employ a special staff of expert engineers and accountants competent to assess these services in proper proportion against the network of operating companies served by the overhead organization. Many companies have special service organizations. Among these are the J. G. White group, the Fitkin, City Service, Barstow and Byllesby groups.<sup>28</sup>

In addition to the ordinary holding companies there have been created in many cases separate organizations to undertake construction or managerial services. Contracts are entered into with the operating companies in the same manner as described above with the same effect upon regulation. A case in Wisconsin may illustrate this point. The City Water Co. of Marinette, Wisconsin was the operating company. The City Water Works Co. of Merrill, Wiscon-

<sup>28</sup> See Federal Trade Commission Report No. 213, pp. 170-177.

sin was the construction company. The former entered into a contract with the latter for construction work and agreed to pay the cost of construction plus 15 per cent. The Railroad Commission of Wisconsin had no power to supervise this contract. It did, however, notify the operating company that while such a contract might be entered into by the company, the commission would allow only cost plus 5 per cent to be figured in the rate base. This illustrates the indirect way in which the commissions are forced to act with reference to such contracts.

It is quite possible that these gaps in commission supervision of financial operation could be covered by a few changes in the statutory basis of commission authority. If the commissions were authorized to supervise service contracts between the operating companies, on the one hand, and the various construction companies, holding companies, finance and managerial organizations, on the other, and in addition were allowed directly to supervise the activities of the latter group more effective control would doubtless result. It would help materially also if the legislatures definitely directed the commissions to exclude from all consideration the inflated prices paid by holding companies for the control of operating concerns.

#### RATES

The control of rates is the crux of the problem of utility regulation. The demand for public regulation originally came from consumers who were concerned that the monopolistic conditions characteristic of this industry should not result in exorbitant and unreasonable rates. It is therefore inevitable that rate control should be the storm center of the controversy as to the effectiveness of public service commission control. All of the forty states which allow

their commissions to regulate the light and power companies have given them power to regulate rates and supervise rate schedules. This includes the authority to make valuations of property for rate-making purposes. The question as to how well they have succeeded in this phase of the work presents itself.

When it was inaugurated, commission regulation was hailed as the introduction of "scientific" methods and as the beginning of an era of control which would be definite, precise and eventually almost automatic. That particular hope the commissions have certainly failed to realize. They would probably be the first to admit it. Rate making in 1928, despite a score of years of effort on the part of the regulatory bodies, is almost as hopelessly muddled, indefinite, and "unscientific" as it ever has been. With the exception of parties at interest, there is a general agreement that it is on an unsatisfactory basis. This is true despite the fact that some for one reason or another are vigorously defending the commission idea and ceaselessly opposing any fundamental change. The extent to which the commissions have failed in this respect of course varies with the different states and depends upon the extent of commission authority, the character of the commissioners and a large number of other factors. Some of the reasons for such general failure apply in all cases. Two or three specific reasons were discussed in the preceding paragraphs. But the basic reason is the lack of a *definite* mandate from the legislature.

1. The statutes creating the commissions in almost every case endowed them with the authority to fix "reasonable rates."<sup>29</sup> But unfortunately they failed to define the term "reasonable." The difficulties made inevitable by the use

<sup>29</sup> Actually the statutes include other words such as "fair," "non-discriminatory," "just," "equitable."

of this vague term have proved to be real obstacles. The responsibility of defining the term devolved upon the commissions themselves. Without guidance from the legislature and without any help from the courts which in previous decisions had usually held that rate making was a legislative function in which they could not interfere or even assist, the commissions from 1907 on have attempted to work out by a trial and error process some principle which would protect both the consumer and the investor in light and power securities. The legislature in each case should have established a general policy which might have been applied by the commissions to specific cases. The lack of a legislative mandate in this particular has been the direct or indirect cause for much of the confusion and litigation and more recently has given rise to popular distrust of public service commission regulation.

2. In the second place the influence of the courts must be mentioned. Lacking a definite legislative mandate, the commissions attempted to puzzle out a policy of their own. The policy that thus emerged after years of experimentation may be summarized as follows: Rates should be based upon production costs including all operating expenses, interest on borrowed money and dividends on invested capital. In other words, the policy of prudent investment was generally accepted by the commissions as being a fair, reasonable and definite basis for rate making. There was apparently a real possibility that if they were able to value the original properties according to a definite plan and to improve their accounting control so that the essential facts of utility operation could be quickly and definitely extracted an adequate rate-making policy would come about.<sup>30</sup> At least it is clear that under such a scheme they

<sup>30</sup> 47 Sup. Ct. 144, U. S. 1926.



would be dealing with tangible elements and ascertainable values.

This policy received a serious setback when the Supreme Court handed down its decision in the Indianapolis water rate case.<sup>31</sup> After years of "backing and filling" the court in this case handed down the dictum that practically shattered this policy and that ultimately may prove to be the ruin of commission control entirely. Justice Butler, who wrote the majority opinion, said in substance that rates should be based not upon the "prudent investment" theory developed by most of the commissions but upon a "reconstruction cost-new" theory.<sup>32</sup> According to this dictum the court would declare the rates confiscatory and therefore unconstitutional unless the commissions should allow the utilities to earn a fair return upon the estimated cost of reproducing their properties at prevailing price levels with due allowance for intangibles. In other words, rate making would not be a definite process but would become an operation in which guesswork cloaked under the title of "expert estimates" would hold sway.<sup>33</sup>

Not only will this theory mean a complication of rate-making procedure but it will also tend to operate as a virtual nullification of rate regulation because the commissions have been influenced as much by what the court has said in this connection as by its actual holdings in other cases. Let us suppose that the original cost of a company was \$100,000,000, consisting of \$75,000,000 in 6 per cent bonds and \$25,000,000 in capital stock. Under the prudent

<sup>31</sup> John Bauer in his *Effective Regulations of Public Utilities*, which was written before the Supreme Court decision noted above, points out that in this way regulation would be quite successful.

<sup>32</sup> The next chapter will consider in detail the place of the courts in a system of commission control.

<sup>33</sup> The Massachusetts commission has resisted this point of view with great persistency. A case based upon the Massachusetts commission's theory of prudent investment was recently taken before the federal court.



investment theory the owners of the capital stock would be entitled to an 8 per cent return on their holdings. Now assume that the reconstruction cost of this property based upon a higher price level is figured at 50 per cent greater than the original cost. The theory established by the court is that the company is entitled to an 8 per cent return on this imaginary \$50,000,000 which has been invested by no one and which is not involved in the business at all. The holders of the \$75,000,000 worth of bonds will not benefit by this additional income on the mythical millions. Their return is fixed at 6 per cent on the \$75,000,000 which they actually have provided. Hence the 8 per cent on the \$50,000,000 will accrue to the holders of the capital stock in addition to the return already received from the \$25,000,000 actually invested. In this way they will be earning an 8 per cent return on the \$75,000,000, or a 24 per cent return on the actual dollars which they have at stake. Witness, therefore, a regulatory system designed to protect the public from a monopoly price but at the same time fixing a rate which brings in a 24 per cent return on invested capital. The acquiescence of the commissions in this point of view has done much to bring their control under criticism.

3. A final limitation upon commission regulation must be mentioned. It is a fact that under our constitutional provisions the states or their agencies cannot regulate transmission of power across boundary lines. This will be discussed in greater detail at another point in the study.<sup>33</sup> Here however there is a definite limitation upon the possibility of relying exclusively upon commission regulation even if it were reorganized and improved. It is clear that interstate transmission will play an increasingly important rôle in the power industry. Under the present arrange-

<sup>33</sup> See Chapter IV.

ment the commissions can control only the retail rates of power transmitted from another state. Despite statements of utility officials to the contrary this is not sufficient to safeguard the public interest. For it must be clear when taking the attitude of the courts into consideration that no commission could fix a retail rate which would be so low as to make a fair return on investment impossible. This enables interstate transmission companies to charge wholesale rates to the distributing companies that might be unreasonable and unwarranted. Such wholesale prices no matter how excessive would be included as an operating expense and the commissions would be practically powerless. That such a policy would be economically unsound and would in the long run defeat itself is no guarantee that some companies would not take advantage of such absence of regulatory control.

#### CONCLUSION

The commissions started to function under circumstances which have materially changed during the past decade. Additional power necessary to cope with changed conditions has been denied them by the legislatures. Some changes of procedure, extensions of authority, and clarification of legislative policy would enable them to meet the present situation in a more satisfactory way than they are now doing.

In two important particulars they are definitely hampered in the exercise of their powers. The first of these is the uncertain attitude of the Supreme Court in regard to the base on which rates shall be fixed. The second is their lack of authority over the increasingly great amount of interstate shipment of power. These two difficulties constitute the subject matter of two later chapters.

## CHAPTER II

### THE RÔLE OF THE COURTS IN REGULATION

PUBLIC service commissions are created by legislative enactments, and the extent of a commission's power is determined by such legislation. Public service legislation like all other legislation may be subject to judicial review for the common law has as part of its accepted ideals and technique the supremacy of the law, which embraces judicial interpretation of legislation. The validity of any statute and the exercise of power under it may be very materially affected by judicial review. Statutes governing the regulation of utilities have been no exception to this rule. Constitutional considerations are most frequently involved in public utility litigation, but again the court may simply be faced with the task of interpreting the statute in the light of the common law. The rule of interpretation applied in this latter case is that every statute which seeks to change the common law is to be strictly construed. In the application of this canon of interpretation, the courts have frequently gone so far as to change the legislative intent of the statute involved.

Furthermore, in practically every public service commission law there may be found provisions that by their nature cannot be absolutely definite and concise, thus making interpretation by the courts inevitable. In the all important matter of rate making, for example, the commission may be empowered to set a "just" or a "reasonable" rate.<sup>1</sup> Again the commission is authorized to permit an

<sup>1</sup> "Whenever upon an investigation, the commission shall find any rates, tolls, charges, schedules, or joint rate or rates to be unjust, unreasonable, insufficient, or unjustly discriminatory or to be preferential, or otherwise in violation of any of the provisions of this act, the commission shall determine and by order fix just and reasonable rates, tolls, charges, schedules,

individual or a corporation to engage in a public service undertaking whenever it finds that entrance into the service is "necessary or convenient for the public service."<sup>2</sup> As a final example, the commission is given the right to approve the issuance of securities only when, among other things, it finds that the issue "is compatible with the public interest."<sup>3</sup> It cannot be denied that such indefinite terms as "just" and "reasonable," "necessary or convenient for the public service" and "compatible with the public interest" give rise to wide and honest differences of opinion as between the commission on the one hand and the utility companies or the consuming public on the other.

#### REGULATORY POWER PRIMARILY LEGISLATIVE

It must be emphasized again that utility regulation is primarily a legislative and not a judicial process. As such the primary responsibility for its exercise devolves upon the legislative branch of the government and not upon the courts. While the influence of the courts in public control has been profound, the judiciary can exercise little if any initiative in regulation. It must wait until a specific controversy has been presented for judicial determination.

#### NATURE OF REGULATION UNDER THE POLICE POWER

The exceptional regulation to which utilities are subject is explained by a long-established common law concept that certain enterprises bear so close relation to the public that the state has a right to exercise such control as will guarantee that its citizens will continue to enjoy the fruits

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or joint rates to be imposed, observed and followed in the future in lieu of those found to be unjust, unreasonable, insufficient or unjustly discriminatory or preferential or otherwise in violation of any of the provisions of this act." Public Service Commission Act of Indiana, p. 18, sec. 72.

<sup>2</sup> New York Public Service Commission Law, Section 53.

<sup>3</sup> 4 Code of Alabama, 1923, pp. 477-78, sec. 9744-45.



of those services. At the present time the regulation of quasi-public or public utility enterprises is usually justified upon the grounds that such regulation is a valid exercise of the police power of the state. This power which may be said to be inherent in sovereignty involves the right to enact measures in the interests of public health, safety, morals, economic welfare and sometimes convenience. While the exercise of the police power is a legislative function, the question of whether a given law is a *valid* exercise of that power becomes in actual litigation before the courts a matter for judicial determination. The courts in such a case are called upon to decide whether the regulatory legislation in question can be justified as a reasonable effort to solve a pressing police problem. That the legislature has already answered this question in the affirmative is attested by its positive action in enacting a given law. Nevertheless in a case properly brought before them, the courts have the power to substitute their judgment for that of the legislature and may decide *de novo* the question as to whether the social situation demands that type of regulation.<sup>4</sup> Therefore judicial decisions have positively determined the nature and scope of police power. But no single judicial decision nor the sum total of all such decisions or opinions concerning police power can ever establish precedents so binding as to tie the hands of either the courts or the legislatures for all time, for the social needs of tomorrow are not accurately predictable. Laws that may be unnecessary today may be imperative a decade later and regulatory legislation partially desirable today may under different and slightly changed conditions be a quintessential of welfare.

The courts have sustained as proper exercise of police power state statutes designed to secure the protection of

<sup>4</sup> *Lochner v. New York* (1905), 198 U. S. 45, 49 L. Ed. 937.



health and morals, the preservation of safety and order and the regulation of public callings. These objects or ends do not mark the boundaries of the police power of the state for in many recent cases it has been pointed out that so essential an attribute of the sovereign power of the state cannot be confined to these categories. Thus in *Chicago, Burlington and Quincy Railroad Company vs. Illinois*, it was said:

"We hold that police power of a state embraces regulations designed to promote the public convenience or the general prosperity."<sup>5</sup>

In *Bacon vs. Walker*, a United States Supreme Court decision, it was stated,

"That power [the police power] is not confined as we have said to the suppression of what is offensive, disorderly or unsanitary, but extends to such dealings with the conditions which exist in the state as to bring out of them the greatest welfare of its people."<sup>6</sup>

In *Lake Shore and Michigan Southern Railway vs. Ohio*, Mr. Justice Harlan said:

"But in our opinion the power, whether called police, governmental, or legislative, exists in each State, by appropriate enactments not forbidden by its own constitution or by the Constitution of the United States, to regulate the relative rights and duties of all persons and corporations within its jurisdiction, and therefore to provide for public convenience and the public good."<sup>7</sup>

Police power is often confused with the power of eminent domain which is likewise inherent and legislative. This power enables the state to take private property for a public purpose subject to constitutional guarantees of just

<sup>5</sup> (1906) 200 U. S. 561, 592, 50 L. Ed. 596, 609.

<sup>6</sup> (1907) 204 U. S. 311, 318, 51 L. Ed. 499, 502.

<sup>7</sup> (1899) 173 U. S. 285, 297, 43 L. Ed. 702, 707.

compensation. From the application and expansion of the general welfare phase of police power and the power of eminent domain much of the present-day law of public callings has developed. But the common law of public callings was well established long before state legislatures concerned themselves with the specific task of regulation. The common law was developed from the concept of the quasi-public nature of certain callings which the courts differentiated from purely private enterprises. In so far as modern statutes do not nullify these common law rules they still prevail. Water power in its various forms from the early days of primitive mill wheels to the giant turbines of modern times has been regarded by the courts as a public calling. Consistent with this policy, the law of electric power, whether generated by steam or water, is the law of public callings modified to meet the conditions peculiar to that industry.

#### STATE'S POWER TO REGULATE QUALIFIED BY FEDERAL CONSTITUTION

While the power to regulate under the police power is inherent in the state, its exercise may be limited by provisions in the constitutions of the several states and like all other powers of the state, by the federal Constitution. It is the prevailing opinion of constitutional authorities that, since the government of the United States is a government of delegated powers, there is no general police power in the national government, but only such quasi-police power as is necessary and proper to carry into execution the enumerated and implied powers of the Constitution.<sup>8</sup> The litiga-

<sup>8</sup> Federal measures thus adopted have the quality of police measures and may have been prompted by the same legislative motives as prompt the passage of state police measures but they are not strictly speaking police measures. Thus Congress has the power to lay certain taxes, and the constitutionality of a tax law cannot be impinged because this tax law in fact

tion that has come before the federal courts challenging the validity of state regulation has been largely concerned with alleged deprivations of liberty and property under the due process of law clause of the fourteenth amendment.<sup>9</sup> The opinion and decisions of the federal courts holding the state commissions within this constitutional limitation have been highly significant in the recent development of the law concerning the regulation of public utilities.

#### ECONOMIC AND SOCIAL CONDITIONS DETERMINE POWER TO REGULATE

Systematic regulation of industries now regarded as public utility enterprises is comparatively recent. But public control by judicial application of common law standards to enterprises affected with public interest is not new. In earlier periods the interference of public authorities with certain types of enterprise was just as complete as it is today under the modern commission type of control. The technique of regulation is different and the industries controlled are in many cases new, but the basic fact, the right to regulate quasi-public enterprises, remains more or less constant. The technique varies as a result of experience and experiment. The subjects of regulation change as social and economic conditions are altered. Thus in the earlier days the baker and miller were regarded as possessing characteristics of quasi-public callings sufficient at least to warrant careful public regulation. Doctors and tailors

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regulates or even prohibits certain business activity. *McCray v. United States* (1904), 195 U. S. 27, 49 L. Ed. 78. But where the primary and only purpose of a measure is to regulate, such a police measure cannot be passed by Congress.

<sup>9</sup> Constitution of the United States, Article XIV, Section 1, "nor shall any state deprive any person of life, liberty, or property, without due process of law, nor deny to any person within its jurisdiction the equal protection of the laws."

were in the same class. Innkeepers and common carriers have been regarded as exercising quasi-public functions. A moving world requires a changing emphasis. Control over turnpikes and toll roads has given way to regulation of railroad and steamship lines. Grain elevators and insurance companies now present pressing problems. Future economic and social changes will doubtless bring further modifications in the category of enterprises subject to this control.

#### FACTORS THAT DETERMINE PUBLIC CHARACTER OF AN ENTERPRISE

Before any enterprise can be regulated as a public utility its public character must be determined. If a private enterprise resists the attempt of the state to regulate it we have in the last analysis a judicial question and require a judicial determination as to whether it has a public character. What is the test? The several factors that have become generally recognized are enumerated and discussed below. They are five in number.

Court decisions indicate that the case for public regulation is clearest in those utilities that enjoy a natural monopoly, that is, where there are natural limitations on the source of supply essential to that business, thus preventing effective competition. Thus it has been held that those who control the most advantageous watersheds have a natural monopoly in the water supply and that the state may compel the waterworks to supply all who apply to the full extent of its undertaking.<sup>10</sup> Sites where water power may be most advantageously developed are necessarily limited; therefore, if the enterprise contemplates the sale of water power to various users, it is subject to the full

<sup>10</sup> *Haugen v. Albina Light and Water Company* (1891), 21 Ore. 411, 28 Pac. 213.



application of the law of public callings.<sup>11</sup> Those who have impounded streams for an irrigation system have assumed a public character.<sup>12</sup> By the same reasoning, where a natural gas field has been preëmpted, this enterprise must without discrimination supply the public which it has undertaken to serve.<sup>13</sup> In all cases of natural monopoly of an essential commodity the case for regulation is complete.

Geographical location of an activity may give to that activity the character of a natural monopoly. In *Munn vs. Illinois*, the pioneer Supreme Court decision which upheld the constitutionality of an Illinois statute regulating the grain elevators of Chicago, the court said: "They [the elevators] stand in the very 'gateway of commerce' and take toll from all who pass."<sup>14</sup> This same factor determined the decision in *People vs. Budd*.<sup>15</sup> As regards the consumer's relation to the utility, the advantageous site gives to that utility monopoly advantage and makes possible monopoly abuse. This factor is strikingly clear in those cases involving union stations, terminal facilities<sup>16</sup> and stockyards.<sup>17</sup>

The character of the service may give to an enterprise monopoly advantage. Thus it has been held that if the product is such that it can have only a local distribution, the possibility of outside competition is remote. For this reason the selling of gas and electricity is a public em-

<sup>11</sup> *Sammons v. Kearney Power and Irrigation Company* (1906), 77 Neb. 570, 110 N.W. 308.

<sup>12</sup> *Wheeler v. Northern Colorado Irrigation Company* (1888), 10 Colo. 582, 17 Pac. 487.

<sup>13</sup> *State ex rel. Wood v. Consumers Gas Trust Company* (1901), 157 Ind. 345, 61 N.E. 674.

<sup>14</sup> (1872) 94 U. S. 113, 132, 24 L. Ed. 86.

<sup>15</sup> (1889) 117 N. Y. 1, 22 N. E. 670.

<sup>16</sup> *State v. Jacksonville Terminal Company* (1899), 41 Fla. 363, 27 So. 221.

<sup>17</sup> *Ratcliff v. Wichita Stockyards Company* (1906), 74 Kan. 1, 86 Pac. 150.



ployment<sup>18</sup> while the selling of oil lamps and candles for light and oil and coal for heat is private. Oil and coal and lamps and candles may be shipped in the channels of trade to compete in every market, whereas gas and electricity must come from one or a very few local companies. This judicial test may well place even the ice plants of southern cities in the category of public utilities.

The immediacy of the patron's needs has been another factor the courts have considered in determining public service. Where the patron's need is immediate the enterprise enjoys what amounts to monopoly advantage. The test together with their other monopolistic characteristics was powerfully persuasive in fixing the public character of the telegraph<sup>19</sup> and the telephone.<sup>20</sup> When the patron's needs are urgent he is compelled to deal with the concern close at hand. There is no real alternative to furnish him protection.

The cost of the plant and the large scale upon which the business is conducted, as well as other economic factors either singly or in combination, may destroy effective competition and create monopoly advantage. The business may have grown to such proportions that vast sums would be involved in constructing a competing plant so that no one would care to take the risk for fear of failure. If these facts exist we have a clear case of actual monopoly, and any employment upon whose service or products the public or any part of the public is dependent, which does in fact enjoy monopoly advantage, may be regulated by the state in the interest of the general welfare.

These are the principal characteristics and factors that

<sup>18</sup> *Shepard v. Milwaukee Gas and Light Company* (1858), 6 Wis. 539.

<sup>19</sup> *Green v. Western Union Telegraph Company* (1904), 136 N. C. 489, 49 S. E. 165.

<sup>20</sup> *State ex rel. Gwynn v. Citizens' Telephone Company* (1901), 61 S. C. 83, 39 S. E. 257.

have received judicial sanction and notice in determining public character which warrants coercive state interference and regulation. The common factor is virtual monopoly. Quite frequently there is legal monopoly as well. But under our constitutional system only an industry or service which amounts to a natural monopoly can be considered a legal monopoly. Legal monopoly is not therefore the test of public character.

On the last three counts the electric light and power industry clearly has a quasi-public character and the courts have agreed to this.<sup>21</sup> On the first count as well all water power developments would be characterized as monopolistic and therefore subject to regulation.

The determination of when a virtual monopoly exists is in the end judicial. Judicial decisions on this point are consequently a basic factor in public utility regulation since they determine the condition precedent to the legislature's regulatory power. The extent to which public regulation and state interference will be extended in this country depends very largely therefore on the social views of our judges. In determining what constitutes a public service the courts in the main have been willing to accept the declarations of the states that public necessities are involved. It may be assumed that they will permit more rather than less regulation in the future, except with regard to the regulation of charges or prices.<sup>22</sup>

<sup>21</sup> See, for example, *Southern Oklahoma Power Company v. Corporation Commission* (1923), 96 Okla. 53, 220 Pac. 370.

<sup>22</sup> Recent decisions of the Supreme Court indicate disapproval of price regulation for business enterprises which are not engaged in insurance or common carriage or analogous pursuits. See *Tyson v. Banton* (1926), 273 U. S. 418, 71 L. Ed. 718; *Ribnik v. McBride* (1927), 277 U. S. 350, 72 L. Ed. 913; and *Williams v. Standard Oil Company* (1928), 73 L. Ed., *Advance Opinions* 141.

## JUDICIAL REVIEW OF COMMISSION REGULATION

One of the most perplexing problems of regulation grows out of the relation of the courts to the work of the commissions. To what extent is the work of administrative boards and commissions final? What is the scope of judicial review? The amount, the nature and the scope of judicial review depends upon the statutory powers of the commissions, the law regulating judicial procedure and the legal and constitutional rights of consumer and utility owner. In New York, for instance, the railroad law, a section of the public utility law, from which the Public Service Commission draws its power, together with the New York Code of Civil Procedure, enumerates a score of situations in which judicial review of the work of the commission may be obtained by parties at interest as a procedural right. In addition to the procedural provisions the common law of New York developed by judicial decisions preserves other grounds for judicial review. Aside from these provisions a general rule governing judicial review may be stated as follows:

1. All cases involving questions of law in contradistinction to cases involving pure questions of fact may be reviewed by the courts.

2. All cases in which a federal question is involved, that is, where the utility asserts a right under the federal constitution may be reviewed by the courts.

The element that makes a question one of law distinct from one of fact is not always easy to perceive. The truth is that questions of law frequently involve issues of fact and that questions of fact may actually be regarded by the courts as questions of law. Whether a commission order challenged in the court warrants judicial review, *i.e.*, in-

volves a question of law, depends upon the opinion of the judge before whom the case is argued.

If the court finds that the appeal presents an issue of fact only, it will not, according to the language of numerous opinions, substitute its judgment for that of the commission.<sup>23</sup> So much for the judicial formula. How does it work in practice? A judicial doctrine of long standing both before and since commission control was inaugurated declares "reasonableness" to be the one vital limitation on all regulation. Statutes, municipal ordinances and orders of commissions regulating power companies or any other public services must be reasonable. Thus the power of a public service commission to refuse an electric light company permission to issue stocks and bonds has been held to depend on whether such issuance is "reasonably necessary."<sup>24</sup> In a recent case in Maryland the commission held that a certain acquisition of several small companies by a larger one at a high price was not reasonably necessary or in the public interest. The court, appealed to by the company, then declared that the commission must hold the transaction to be against the public interest before it could refuse its permission.<sup>25</sup>

Likewise city authorities cannot enforce regulations which are arbitrary, capricious or unreasonable.<sup>26</sup> Is this test of

<sup>23</sup> Professor John Dickinson, in his *Administrative Justice and the Supremacy of the Law*, devotes an entire chapter (Chapter VI) to the topic, "Court Review of Administrative Determinations in the Field of Public Utility Regulation." See also Professor Ernst Freund, *Administrative Powers over Persons and Property*, Chapter XV.

<sup>24</sup> *People v. Public Service Commission* (1910), 137 N. Y. App. Div. 810, 122 N. Y. S. 641.

<sup>25</sup> *Electric Public Utilities Company v. West* (1928), 154 Md. 445, 140 Atl. 840. But the New York Public Service Commission has announced that it will not be controlled by the decision of the Maryland court. "The duty of the Commission is to reject the application for purchase and consolidation unless it is affirmatively in the public interest of the consumers." *Re Consolidated Gas Company of New York*, P. U. R. 1928 E 19, 35.

<sup>26</sup> *Merced Falls Gas and Electric Company v. Turner* (1906), 2 Calif. App. 721, 84 Pac. 239.



reasonableness one of fact or one of law? In the cases cited above the courts regarded the issues as questions of law and hence reviewable.

About the only positive statement that can be made concerning the court's power to review the work of commissions is that the extent of that power is uncertain. It is impossible even in a given jurisdiction to find a clear definition of the scope of review. Upon an examination of numerous cases one conclusion seems warranted. That is, that the courts are becoming more and more liberal in their attitude toward administrative bodies. In fact they seem less ready to upset the work of such bodies than to undo the regulatory measures of the legislatures. This is, however, by no means universally true. While some courts go to extreme lengths in limiting the powers of commissions, others by their unwillingness to modify the commissions' decisions virtually enlarge their powers. At times the same court gives manifestations of both attitudes in the adjudication of different cases.

One of these liberal decisions is found in the case of *People ex rel. New York and Queens Gas Company vs. McCall et al. Public Service Commissioners*.<sup>27</sup> The Public Service Commission of New York was authorized by statute "to order reasonable improvements and extensions of the works, wires, poles, lines, conduits, ducts and other reasonable devices, apparatus, and property of gas corporations, electrical corporations and municipalities." Acting under the authority of this statute the commission ordered the company to extend its gas mains and services to meet the reasonable requirements of Douglaston and Douglas Manor. The case was heard on appeal before the Appellate Division of the Supreme Court of New York and this court

<sup>27</sup> (1916) 219 N. Y. 84, 113 N. E. 795.



vacated the order of the commission. In the course of the opinion the court said:

"We have no doubt that under this law the question remains for the court to determine, upon the review of the determination of the Public Service Commission, whether the extension ordered was a reasonable extension."<sup>28</sup>

In other words, the court considered this question of "reasonableness" as a question of law. The case was then carried to the Court of Appeals of New York. The latter reversed the order of the lower court and reinstated the order of the Public Service Commission. In the course of the opinion the Court of Appeals said:

"It was not intended that the courts should interfere with the commissions or review their determinations further than is necessary to keep them within the law and to protect the constitutional rights of the corporations over which they were given control. . . . The court at the appellate division did not therefore have the power to determine that the extension of the relator's gas mains and pipes ordered by the Public Service Commission was unreasonable in the sense that it was an unwise or inexpedient order, but only that it was unreasonable if it was an unlawful, arbitrary, or capricious exercise of power. . . . The court at the appellate division substituted its own judgment for that of the Public Service Commission in determining that the latter's order was unreasonable. This decision, if allowed to stand, will seriously hamper the commissions in the discharge of their duties, and go far toward defeating the efforts of the legislature to establish agencies to regulate the great public service corporations."<sup>29</sup>

This opinion of the Court of Appeals of New York did not, however, emancipate the New York Commission from

<sup>28</sup> People *ex rel.* New York and Queens Gas Company v. McCall *et al.* (1916), 171 N. Y. App. Div. 580, 581, 157 N. Y. S. 707, 708.

<sup>29</sup> 1917A 553.

judicial restraint. The courts continue to find ample grounds for reviewing commission orders.

One of the most complete statements concerning the law governing commissions is the following by the Supreme Court of Minnesota in *State vs. Great Northern Railway Company*.

"The order may be vacated as unreasonable if it is contrary to some provision of the federal or state constitution or laws or if it is beyond the power granted to the Commission, or if it is based on some mistake of law, or if there is no evidence to support it, or if having regard to the interests of both the public and the carrier, it is so arbitrary as to be beyond the exercise of a reasonable discretion and judgment."<sup>30</sup>

In the case of *Cincinnati Traction Company vs. Public Utility Commission*<sup>31</sup> the Court expressed the opinion that the order of the commission was not supported by evidence; hence the order was set aside on the ground that it was unreasonable. In this case the commission issued a certificate of public convenience and necessity to a motor bus operator. This was attacked by a trolley company on the ground that no public need existed. The court reversed the order and among other things said:

"Since there is no substantial foundation in the evidence for the order complained of, we hold that the Commission acted unreasonably and unlawfully in making the same, and that the order should be reversed."

Very clearly, therefore, the court here examined the evidence and decided that it was insufficient. This moved it to substitute its judgment for that of the commission but this was done under the formula that patent lack of evidence was a question of law.

<sup>30</sup> (1915), 130 Minnesota 57, 153 N. W. 247, 248.

<sup>31</sup> (1925), 112 Ohio St., 699, 148 N. E. 921.

No matter how much judicial power may be conferred on state commissions and no matter to what extent state courts may be limited in their power to review administrative orders, in all cases involving points of federal constitutional law there is a clear right to judicial review. The Supreme Court of the United States has held that a state law which tends to make difficult the process of appeal to the federal courts is unconstitutional. Thus in the case of *ex parte* Young legislative rates were imposed under penalties that were held to be so excessive as to prevent resort to the courts for purposes of determining the validity of the statutes. Mr. Justice Peckham in delivering the opinion in that case said:

"If the law be such as to make the decision of the legislature or of a commission conclusive as to the sufficiency of the rates, this court has held such a law to be unconstitutional. . . . A law which indirectly accomplishes a like result by imposing such conditions upon the right to appeal for judicial relief as works an abandonment of the right rather than face the conditions upon which it is offered or may be obtained is also unconstitutional." <sup>32</sup>

The above references go to show that both the state and the federal courts are called upon to take a very real part in public service regulation.

#### JUDICIAL REVIEW OF THE REGULATION OF SERVICE

Common law placed upon public utilities a legal obligation to give adequate service to the public. A failure to do so was a breach of legal duty for which the injured party might seek redress in the courts. In the absence of legislation the courts could give very little affirmative relief. Such relief as could be given usually took the form of money damages. Today under special legislation and commission control it is well established by judicial de-

<sup>32</sup> (1908) 209 U. S. 123, 147, 52 L. Ed. 714, 724.

cisions reviewing such legislation that electric light plants, gas companies, telephone systems and water works may be compelled to extend their systems throughout their districts to meet the reasonable demands of a growing community. This may involve the requisition of new source of supply, the laying of pipes in new streets and the construction of new exchanges.<sup>33</sup> The courts safeguard the utility by the common law rule that the obligation thus to extend service is dependent on the existence of a reasonable expectation that the new consumption will in a reasonable time warrant the extension.<sup>34</sup> Thus it has been held that the state may order the erection of new distribution centers for power plants whenever the public need requires them.<sup>35</sup> In every case where the utility resists these commands the court is faced by the task of determining the reasonableness of the order. If the court is satisfied that there is a need and future market for the extension of service and equipment, the validity of the order is sustained.<sup>36</sup>

One of the objectives of public regulation of utilities is the elimination of wasteful competition. For this reason individuals and corporations in a number of States may not enter upon certain public service undertaking until they have obtained from the commission a certificate of conveyance and necessity. In their power to supervise the service of a utility the administrative boards find further opportunity to reduce undesirable competition and duplication of service. This aspect of regulation has been very much in evidence in the regulation of electric light and

<sup>33</sup> *Pocatello Water Company v. Standley* (1900), 7 Idaho 155, 61 Pac. 518.

<sup>34</sup> *State ex rel. Gwynn v. Citizens' Telephone Company* (1901), 61 S. C. 83, 39 S. E. 257.

<sup>35</sup> *Mayor of Worcester v. Norwich and Worcester Railroad Company* (1871), 109 Mass. 103 Atl.

<sup>36</sup> The court might of course sustain the commission finding without inquiring into the evidence.



power companies. Thus in *People ex rel. New York Edison Company vs. Wilcox* the court said:

"It is the settled policy of the state arising through an extended and instructive experience to withdraw the unrestricted right of competition between corporations occupying through special consents or franchises the public streets and places and supplying the public with their products or utilities which are well nigh necessities. . . . This policy instigated and is embodied in the Public Service Commission Law, which was adopted in the interests and for the good of the people and should receive from the courts an activity and effect in aid of that policy within the fair and reasonable meaning of its provisions."<sup>37</sup>

Similar language can be found in the opinions of other state courts where they have been called upon to review the work of commissions in the elimination and prevention of competition.<sup>38</sup>

#### RATE REGULATION

Rate control was the primary objective in the creation of regulatory commissions. It is not surprising, therefore, that control of rates today is by far the most important aspect of the general problem of utility control. Yet regulation of rates is the most uncertain aspect of the entire regulatory process. In all the other phases of regulation judicial decision has in the main sustained legislative action. This is not true of rate regulation for in that field there have been many judicial reversals and the commissions today are uncertain about the procedure in this, their most important task.

Up to the time of the Civil War very few attempts were made to control rates by legislation. The Illinois Ware-

<sup>37</sup> (1912) 207 New York 86, 98-99, 100 N. E. 705, 708.

<sup>38</sup> See also *Weld v. Board of Gas and Electric Light Commissioners* (1908), 197 Mass. 556, 84 N. E. 101. *Idaho Power and Light Company v. Bloomquist et al.*, *State Public Utility Commission* (1914), 26 Idaho 222, 141 Pac. 1083.



house Act, the constitutionality of which was contested in *Munn vs. Illinois*, was among the first real attempts to regulate and control the rates of public utilities by legislation. In the decade that followed, regulatory legislation sprang into existence with mushroom-like rapidity. The abuses made possible by monopoly advantage, practiced especially by the railroads in the matter of rates and rate discrimination, made legislative interference necessary. The abuses in interstate commerce over which the several states had no constitutional control also called loudly for a remedy and Congress responded by passing an act creating the Interstate Commerce Commission. This aimed primarily at a control of interstate railroads and in its inception was used as a means of correcting the abuses of exorbitant and discriminatory rates. It is significant that the bulk of regulatory legislation passed at this time concerned rates and rate control and that practically all of it applied to the railroads. The Illinois Warehouse Act marks an exception and that in part explains the significance of the decision in *Munn vs. Illinois*.

By 1900 social and economic conditions were creating more and larger dependencies on public callings, such as railroads, street railways and light and power companies. Their services were becoming everyday necessities. Widespread use, on the one hand, and monopoly privileges, on the other, made it possible for them to exploit the public in the matter of rates. About 1910 there began a period of flagrant public exploitation. From this time on rate and other regulation, both legislative enactment and commission control, have steadily increased.

#### REASONABLENESS, THE BASIS OF RATE REGULATION

The major premise of all rate control is the common law duty to serve at a reasonable rate. The courts protected

the consumer from exorbitant charges long before legislatures concerned themselves with rate regulation. This common law duty still prevails. Under our constitutional system the utility is entitled to charge for its services rates which will yield a reasonable return on the property employed in that service. Guarantees of this right are found in the fifth and fourteenth amendments in the federal Constitution. These are known as the due process of law provisions of the Constitution. The former is a guarantee against actions of Congress and the latter a guarantee against actions of the states.<sup>39</sup> If a state statute fixes a rate which does not yield a fair return on the property employed in that service, a deprivation of property and a denial of due process of law under the fourteenth amendment results, with the consequence that such a rate is considered invalid by the courts.

#### POWER OF COURTS IN RATE MAKING

The statement has been made in the course of this chapter that rate making is essentially legislative, a statement that has been reiterated by the courts many times. This is a correct statement but it is important to have it understood in what sense it is correct. The decision in *Munn vs. Illinois* was thought to establish the doctrine that rate making was a legislative function, the implication being that rates fixed by the legislature were final and not *reviewable by the courts*. But in estimating just what the decision does establish the issue or issues then before the court must be kept clearly in mind, for it is not what the court *says* that is important but rather what the court actually *does*. This distinction is often overlooked. Much of our so-called *stare decisis* is really only *stare dicta*.

<sup>39</sup> Similar guarantees against state action are to be found in all of the state constitutions.

In *Munn vs. Illinois* the only issue before the court was the question of the constitutional power of the Illinois legislature to prescribe maximum rates for and otherwise regulate the grain elevators of Chicago. The rates themselves were not in controversy. Therefore the court was not called upon to review them. When the court decided that the Illinois statute was a constitutional exercise of power it did not hold that the rates were constitutional under the fourteenth amendment. The decision merely established that grain elevators were affected with a public interest and like other public callings could be regulated. The constitutionality of the specific regulation, *i.e.*, the compensatory or confiscatory nature of the rates, was not in question. Since the decision in *Munn vs. Illinois* the United States Supreme Court has not only said that rates are reviewable by the courts but it has reviewed scores and declared some of them to be invalid. Rate regulation is essentially a legislative function in the sense that the courts never fix a rate unless empowered to do so by statute. The courts, however, may be called upon to decide whether a given rate is confiscatory or compensatory. If the rate is found to be confiscatory it is declared invalid, but the court does not establish a new rate in its place unless empowered to do so by statute. The legislature, usually through its agent the commission, is now free to act again or the utility may establish such rates as it sees fit subject to the common law and future legislation. The courts thus review rates only when faced by cases actually disputing their validity.<sup>40</sup>

In the process of determining whether a given rate is compensatory and reasonable or confiscatory and unreasonable, the courts can and do wield great power and influence. They are forced to the determination of what the rate base

<sup>40</sup> *State Public Utility Commission v. Springfield Gas and Electric Company* (1920), 291 Ill. 209, 125 N. E. 891; *Regan v. Farmers' Loan and Trust Company* (1894), 154 U. S. 362, 38 L. Ed. 1014.

shall be, and this determination goes to the very foundation of just and scientific rate making. The task involved is beset with many difficulties as the hesitating and divergent opinions of the Supreme Court indicate.

A reasonable rate has been defined by the courts as a fair return on the investment coupled with the right of the consumer to have no more exacted from him than the service is worth to him. Thus in the *Kennebeck Water District vs. Waterville*, where the reasonableness of the rates to be charged the consumers of water was involved, the court said:

"Yet while the company is entitled so far as this case shows to a fair return upon the value of the property used for the public at the time it is being used, the public, that is the consumers, may demand that the rates shall be no higher than the services are worth to them, not in the aggregate but as individuals."<sup>41</sup>

In *Brunswick Water District vs. Maine Water Company*, the court said:

"Reasonableness relates both to the company and the customer . . . a public service company cannot lawfully charge in any event more than the services are reasonably worth to the public as individuals, even if charges so limited would fail to produce a fair return to the company upon the value of its property or investment."<sup>42</sup>

This same rule was announced by the Interstate Commerce Commission in cases within its jurisdiction. Thus in *Imperial Coal Company vs. Pittsburgh and Lake Erie Railroad Company* the commission said:

"The value of the service is generally regarded as the most important factor in fixing rates."<sup>43</sup>

<sup>41</sup> (1902) 97 Maine 185, 202, 54 Atl. 6, 13.

<sup>42</sup> (1904) 99 Maine 371, 386, 59 Atl. 537, 540-41.

<sup>43</sup> 2 Interstate Commerce Commission R 436.



violated the fourteenth amendment in that the prescribed rates were so low as to amount to a deprivation of property without due process of law. In the course of his opinion Mr. Justice Harlan first enunciated three principles which are worthy of quotation because they set forth clearly the function of the courts in rate regulation cases.

"I. A railroad corporation is a person within the meaning of the Fourteenth Amendment declaring that no state shall deprive any person of property without due process of law, nor deny to any person within its jurisdiction the equal protection of the law.

"II. A state enactment, or regulations made under the authority of a state enactment, establishing rates for the transportation of persons or property by railroad that will not admit of the carrier earning such compensation as under all the circumstances as is just to it and to the public, would deprive such carrier of its property without due process of law, and deny to it the equal protection of the laws, and would therefore be repugnant to the Fourteenth Amendment of the Constitution of the United States.

"III. While rates for the transportation of persons and property within the limits of a state are primarily for its determination the question whether they are so unreasonably low as to deprive the carrier of its property, without such compensation as the Constitution secures, and therefore without due process of law, cannot be so conclusively determined by the legislature of the state, or by regulations adopted under its authority that the matter may not become the subject of judicial inquiry."<sup>48</sup>

The Nebraska legislature in creating the Board of Transportation did not clearly define the factors that should be weighed in determining the value of the railroad property, that is, the rate base for purposes of fixing the maximum charges. The Board of Transportation was accordingly in doubt as to just how it should determine the rate base. The evidence introduced before the Supreme Court in the *Smyth vs. Ames* case indicated that various and sundry

<sup>48</sup> 169 U. S. 526, 42 L. Ed. 842.



items were included in a more or less unscientific manner. In reviewing the charges the court found that as a matter of fact the proposed rates were confiscatory according to any method of valuation.

But the court was not content merely to declare the charges unconstitutional. It attempted in the same ruling to indicate the several factors that should be taken into account in determining the value of the property. It is this part of its statement that has given rise to so much confusion in subsequent litigation. The statement in question reads as follows:

"... the basis of all calculations as to the reasonableness of rates to be charged by a corporation maintaining a highway under legislative sanction must be the fair value of the property being used by it for the convenience of the public. And in order to ascertain that value, the original cost of construction, the amount expended in permanent improvements, the amount and market value of its bonds and stocks, the present as compared with the original cost of construction, the probable earning capacity of the property under particular rates prescribed by statute, and the sum required to meet operating expenses, are all matters for consideration and are to be given such weight as may be just and right in each case. We do not say that there may not be other matters to be regarded in estimating the value of the property. What the company is entitled to ask is a fair return upon the value of that which is employed for the public convenience. On the other hand what the public is entitled to demand is that no more be exacted from it for the use of a public highway than the services by it are reasonably worth."<sup>49</sup>

It is but natural that the court should dilate upon the factors that enter into determination of the rate base because this was the first case of its kind. In expressing its opinion it recognized that the legislature was struggling with a complex social problem. The way of rate making was un-

<sup>49</sup> 169 U. S. 546-47, 42 L. Ed. 849.

charted. The legislature's first effort to make a rate was unsatisfactory to the court. Its next effort might also prove unacceptable to the judicial mind. Therefore reasonable men such as may be presumed to have constituted the court must have seen the social calamity that would arise from the long drawn out trial and error method of hitting upon a regulatory procedure which would both satisfy the economic needs of the situation and meet the due process requirements of the courts. The sensible thing for them to do was to point out something which would be acceptable. They did not presume to tell the legislature what it must do. Their intent was to give the legislature some idea of what would be found acceptable by the courts. Directions to that effect are not uncommon in the findings of the courts. Such opinions enunciated by the court during the hearings of a case which are beside the point and not necessary for the decision reached are spoken of as dicta. Dicta are not binding for the future either on other judges or other courts. In the case just cited, for instance, the court was called upon to decide whether the proposed rates were confiscatory or not. This it did. It was clearly not obligated to outline in what manner a fair and reasonable rate should be determined as this question was not before the court. The distinction between what the court does in deciding a case and what it says in the course of discussing it is fundamental. This distinction must particularly be kept in mind in consideration of the rate case decisions made by the United States Supreme Court.

The state regulatory bodies have within recent years been following the dicta rather than the actual decisions of the court in rate cases. The utility companies have been contending that the court has set a definite standard for the fixing of the base on which rates are established, that of reproduction cost new. The *Smyth vs. Ames* decision,

quoted above, is cited by them and by the commissions upholding their contention as the legal precedent. It becomes necessary to draw the distinction between dicta and actual decision in this case and other important ones.

From the *Smyth vs. Ames* decision, which has been interpreted as the Supreme Court's first attempt to guide the commissions, it appears that seven different factors are suggested but no effort is made to specify the relative value to be attached to each of these various elements. In the language of the opinion "these elements are to be given such weight as may be just and right in each case." Certainly the court never intended such vague language to constitute a formula for the determination of value. Moreover some of the elements noted have since been entirely ignored and never again mentioned by the courts. Thus par and market values of the securities included in the statements have long since been dropped as elements in the determination of value, if they ever were a factor. Certainly a consideration of such factors was not necessary in deciding *Smyth vs. Ames*, yet they are listed in the opinion as being of equal importance with the original cost and reproduction cost. Furthermore the statement entirely ignores the item of depreciation, yet depreciation is necessarily a factor in determining value of property and has usually been so considered. It is ever present both in rate and in condemnation proceedings. It is highly improbable that if the court believed that it was actually proposing a scientific formula for ascertaining value this well recognized element would have escaped its notice.

One other factor must be considered in weighing the opinion in *Smyth vs. Ames*. Judicial statement and judicial holdings must always be interpreted in the light of the social and economic conditions of the time when the case was tried. This case was decided in 1898, long before the great

rise in current prices had produced the discrepancy between the original cost and reproduction cost. Although present-day circumstances are markedly different from those of thirty years ago, it is upon reproduction cost now that chief emphasis is laid by the utility companies in their effort to obstruct a reduction of rates or to exact higher ones. They are today contending for this principle of valuation for rate-making purposes. All the implications of the court's dictum were unquestionably not weighed by it because the question of original cost versus reproduction cost now was not then a point at issue.

It must be remembered that the only function of the court in *Smyth vs. Ames* was to pass on the constitutionality of the Nebraska statute; that is, to determine whether or not the rates established were compensatory or were so low as to constitute undue deprivation of property. The only part that the factor of reproduction cost could possibly play would be to serve as a check on confiscation. In *Smyth vs. Ames* no mention was made of a discrepancy between original cost and reproduction cost, for the fact of reproduction cost could in no possible way have served to prevent confiscation. As a matter of fact the court decided that the rates were confiscatory under any basis of valuation. Since a judicial precedent is not established by what the court says but by what the court does, the loose, ambiguous and irrelevant statement in *Smyth vs. Ames* creates at most a persuasive precedent.

2. Another case of some importance in the development of regulation was *Wilcox vs. Consolidated Gas Company* which came before the United States Supreme Court in 1909. It involved the constitutionality of a New York statute fixing an eighty cent gas rate. The court declared the rate not confiscatory under the fourteenth amendment. The language of the opinion apparently recognized repro-



duction cost as a basis for determining value. The pertinent paragraph reads:

"And we concur with the court below in holding that the value of the property is to be determined as of the time when the inquiry is made regarding the rates, if the property which legally enters into the consideration of the question of rates has increased in value since it was acquired, the company is entitled to the benefit of such increase. This is, at any rate, the general rule. We do not say there may not possibly be an exception to it, where the property may have increased so enormously in value as to render a rate permitting a reasonable return upon such increased value unjust to the public. How such facts should be treated is not a question now before us, as this case does not present it." <sup>50</sup>

Here again we must note what the court did rather than what it said. It found the gas rate not confiscatory under any basis of valuation. The above statement is therefore pure dictum. Reproduction cost versus original cost was not directly presented and not an issue before the court. Likewise at this date there had been no general rise in price level so as to create a discrepancy in the value resulting from the two methods of ascertaining it. The facts are that there would have been as high a value upon one basis as upon another. The court was concerned only with value in general terms, for the purpose of determining whether or not these rates were confiscatory. The statement quoted above is therefore irrelevant as far as the actual facts before the courts are involved. It is no less ambiguous than the statement in *Smyth vs. Ames*. Certainly it cannot be cited as a conclusive precedent in favor of the reproduction cost basis for valuation.

3. Four years later the Minnesota Rate Cases litigating the constitutionality of the Minnesota statute which fixed

<sup>50</sup> 212 U. S. 19, 52, 53 L. Ed. 382, 399-400.

maximum rates for railroads were decided. The constitutionality of these statutes was sustained as not being confiscatory on any basis of valuation. The language of the court, consequently, is in fact dictum and not a precedent in the following statement. In the course of the opinion Mr. Justice Hughes said:

"It is clear in that ascertaining the present value we are not limited to the consideration of the amount of the actual investment. If that has been reckless or improvident, losses may be sustained which the community does not underwrite. As the company may not be protected in its actual investment if the value of its property be plainly less, so the making of a just return for the use of the property involves the recognition of its fair value if it be more than its cost. The property is held in private ownership, and it is that property and not the original cost of it, of which the owner may not be deprived without due process of law."<sup>51</sup>

At the time of the Minnesota case there had been approximately a fifty per cent rise in general price level over the level in the time of *Smyth vs. Ames*. This factor was not even considered by the court. The court was concerned only with one thing—a fair value of the property—and in this as in the preceding two cases the issue of reproduction cost against original cost was not drawn. The court did not make a choice between one as against the other. It sustained on any basis of valuation the rates which had been established. The decision can be scanned in vain for actual judicial determination in favor of the reproduction cost theory.

4. Reproduction cost versus actual cost was not a major issue until the unprecedented rise in the price level following the war. The utilities now insisted that a rate was confiscatory unless it allowed a reasonable return on the

<sup>51</sup> *Simpson v Shepherd* (1913), 230 U. S. 352, 454, 57 L. Ed. 1511, 1564.

present value of their property based on current prices. In 1922 the Supreme Court was presented with the Galveston Electric Railroad case.<sup>52</sup> The Municipal Board of Commissioners, on whom had been conferred legislative regulatory power, ordered a reduction in the fare from six to five cents. In this case the reproduction cost against the original cost was directly at issue and was argued by counsel for the utility. The municipal boards determined the value by adding to the actual cost 33 1/3 per cent, thus recognizing the higher price level. But the fact was that there had been an increase of approximately 110 per cent in the general price level over the year 1913. The commission went on the assumption that the permanent price level would settle down somewhere near 60 or 70 per cent above the 1913 price level. Although the utility insisted that the rates should be fixed on the basis of the actual value in terms of current prices the Supreme Court sustained the rates as not being confiscatory. Thus the increased prices were given only about one-fourth consideration as a factor in determining value. The significant fact is that the court in giving its decision did not mention the factor of increased prices although it had been strongly urged by the attorneys for the railway. It simply found that the rates were reasonable. It indulged in no theories of rate determination at all. It contented itself with the exercise of its true function of passing on a point of constitutional law.

5. In 1923 three significant cases came before the United States Supreme Court, the Southwestern Bell Telephone Company *vs.* Public Service Commission; <sup>53</sup> Bluefield Water Works and Improvement Company *vs.* Public Service Commission; <sup>54</sup> and the Georgia Railway and Power Company

<sup>52</sup> Galveston Electric Company *v.* City of Galveston, 258 U. S. 388, 66 L. Ed. 678.

<sup>53</sup> 262 U. S. 276, 67, L. Ed. 981.

<sup>54</sup> 262 U. S. 679, 67, L. Ed. 1176.

*vs. Railway Commission of Georgia.*<sup>55</sup> In the Southwestern Bell Telephone case the Public Service Commission had ordered a reduction in telephone rates. The commission's order for a change of rates was based on an estimate of the actual cost of the property less depreciation. The estimate was unscientifically worked out and warranted much technical criticism. It was one of those indefinite and unscientific orders of commissions that have so vexed the courts and invited judicial vetoes. The rates were held to be confiscatory. The court suggested that a certain increase in value was warranted by the increased price of the day. In the course of the majority opinion Mr. Justice McReynolds said:

"The Commission undertook to value the property without according any weight to the greatly enhanced cost of materials, labor, supplies, etc., over those prevailing in 1913, 1914, and 1916. . . . It is impossible to ascertain what will amount to a fair return upon properties devoted to public service without giving consideration to the cost of labor, supplies, etc., at the time the investigation is made. An honest and intelligent forecast of probable future values made upon a view of all the relevant circumstances, is essential. If the highly important element of present cost is wholly disregarded such a forecast becomes impossible. Estimates for tomorrow cannot ignore prices of today."<sup>56</sup>

Here at last seemed to be a clear judicial recognition of the reproduction cost basis for the determination of the rate base. Utility counsel have frequently interpreted it in this way. Yet the fact remains that while there had been almost a 100 per cent increase in the price level over 1913, the majority opinion suggested only a 20 per cent allowance as reasonable for this increase in prices over the actual cost

<sup>55</sup> 262 U. S. 625, 57, L. Ed. 1144.

<sup>56</sup> 262 U. S. at pages 287-88, 67 L. Ed. at pages 984-85.



of the plant. In other words, reproduction cost was allowed only one-fifth consideration in determining value or rate basis. Clearly what the court here did was only to give some consideration to the reproduction cost.

There was as it happened great doubt whether the proposed rates would yield a fair return even on the basis of actual cost. Thus Mr. Justice Brandeis and Mr. Justice Holmes both dissented from the opinion of Mr. Justice McReynolds. Mr. Justice Brandeis wrote a famous opinion in favor of prudent investment or actual cost as the only true and scientific basis for the determination of value in rate cases. Yet both of these dissenting justices concurred in the result. They were both convinced that in this particular case these rates prepared by the board were confiscatory on any basis of valuation. In view of this situation it cannot be maintained that the case establishes a binding precedent in favor of the reproduction cost new as a basis for the determination of value. The most that the court insisted upon is that some consideration should be given reproduction costs in determining value.

6. On June 11, 1923, the court handed down the decision in the Bluefield Water Works case. The main factors in the case were very similar to those in the Missouri case. Indeed they were almost identical. The Public Service Commission of West Virginia fixed a rate for the water works at Bluefield. The rate base was the actual cost less depreciation. The work of the commission warranted considerable technical criticism. The court held that the rates were confiscatory. This was a majority holding as to results, but Brandeis and Holmes dissented from the majority opinion which was almost identical with the opinion in the Southwestern Bell Telephone case. Justices Brandeis and Holmes were convinced that the rates were confiscatory even on

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the basis of actual cost less depreciation. There was no clear choice between the two theories.

7. On the same day that it decided the Bluefield case the court handed down its decision in Georgia Railroad and Power Company *vs.* Railroad Commission of Georgia. The case came before the United States Supreme Court from a lower federal court which had sustained the lower court and the railroad commission. The commission based its valuation for purposes of establishing the rate base on the actual investment less depreciation. The commission however did allow \$125,000 for the increase in the value of certain lands owned by the company. Its final valuation with this increase included was \$5,250,000. The power company claimed a valuation based on reproduction costs new less depreciation, and on this basis asserted a valuation of \$9,500,000. There was here a discrepancy of over \$4,000,000 between the commission's valuation and a valuation based on present prices. Thus the issue was clearly drawn before the court at last and the decision of the court was expected to be a precedent in fact. The court sustained the rates and held that the commission's basis of valuation was correct. Mr. Justice Brandeis, who wrote the majority opinion said,

"The refusal of the commission and of the lower court to hold that for rate making purposes the physical properties of a utility must be valued at the *replacement cost, less depreciation was clearly correct.*"<sup>57</sup>

Here then the Supreme Court announced *as a rule of law* that a company was not entitled to a rate based on reproduction costs new less depreciation. Since the issue was squarely before the court this statement of law was germane to its holding.

<sup>57</sup> 262 U. S. at page 630, 67 L. Ed. at page 1147. The italics are by the present writer.



Mr. Justice McKenna however dissented from this holding and wrote a minority opinion. He regarded the decision as being in conflict with the decision in the Southwestern Bell Telephone case and the Bluefield Water Company case. The dicta of the court did conflict. Its actual holdings did not. The court is concerned only with finding evidence of deprivation or confiscation of property. In the Bluefield case and the Southwestern Bell Telephone case the respective state commissions fixed rates ostensibly on valuations of actual cost less depreciation, but a unanimous court felt that the rate base ascertained was so faulty as to deny a fair return on any basis of valuation, either actual cost or reproduction cost. Thus Mr. Justice Brandeis and Mr. Justice Holmes, although dissenting from the opinion of the majority in these two cases, concurred in the results in each.

In the Georgia Railroad case the commission established a rate base likewise on a valuation of actual cost. The court after hearing all the evidence and analyzing the commission's data as to value according to actual cost found it to be scientifically done and sustained that valuation. In the opinion supporting the holding the court positively stated that the reproduction cost new was not to be the basis for valuation in fixing rates.

The actual holdings in the last three cases apparently established the precedent that where a rate is fixed on a rate base of actual investment and where that estimate bears evidence of scientific accuracy such a rate is not confiscatory under the constitutional ban of deprivation of property without due process of law. If in addition other items are added to the valuation ascertained on the basis of actual investment, such as a sum of \$125,000 added for the appreciation in land value in this case, these additions will of course not defeat the rate, for such additions serve to

take the rate that much farther away from the confiscation margin.

On the basis of actual holdings by the United States Supreme Court until 1926 the law might fairly be stated as follows: actual investment as a basis for valuation is judicially sanctioned and the cost new basis is not a determining factor but one of several factors that may be taken into account. In one case at least, the Georgia Railroad case, reproduction cost new both on the basis of what the court did and of what it said had been definitely repudiated and actual investment as a basis for valuation prevailed.

8. Then came the *McCardle vs. Indianapolis Water Company* case. The language used in the majority opinion of this case written by Mr. Justice Butler has brought further confusion into the popular understanding of the process of valuation for rate making. The Public Service Commission of Indiana in regulating the rates of the Indianapolis Water Company sought to minimize the chances of a judicial reversal. It purported to adopt the so-called rule in *Smyth vs. Ames* for determining the value of the water company in fixing the rates. It allowed reproduction cost to enter as evidence of value together with actual cost and other items. Reproduction cost was to be determined according to prices prevailing over a reasonable period of years. There was no attempt by the commission to fix a rate base on actual investment alone, hence that issue was not before the court. The commission did not present actual prudent investment as a basis of valuation.

The commission found a valuation of \$15,260,400. Suit was brought by the company in a United States District Court in Indiana to enjoin the commission from enforcing rates prescribed on the basis of this valuation. The company asserted that on the basis of the evidence before the commission its estimate of value was too small by \$3,500,-

000. It asserted a valuation of not less than \$19,000,000. The district court found for the water company. The commission therefore appealed on the ground that the District Court allowed too much consideration to the item of reproduction cost which was figured entirely on the basis of spot prices. The case then went before the United States Supreme Court.

The evidence before the court was vast in volume and distressingly confusing. The commission's estimates on the various items of value in no sense coincided with the estimates of the experts for the utility. The Supreme Court after reviewing all the evidence to the best of its qualified ability held that as a question of fact the commission's valuation was too low and that \$19,000,000 was not too high if the utility was to make a reasonable return. This is suggested to be something near 8 per cent. It held that too much weight had not been given to reproduction cost as an item in valuation and that spot reproduction had not been too heavily considered. Justice Butler denied that spot reproduction was controlling, pointing out that if it had been the evidence indicated that the valuation would have totaled \$22,000,000. In other words, the court found that the work of the commission in estimating value was defective as a question of fact and that its valuation resulted in a rate that was confiscatory.

In analyzing what the court did in this case, in contradistinction to what it said, it must be remembered that its primary function was to settle a dispute on the basis of the definite issues that were before it. What were the issues in the Indianapolis Water Company case? The commission asserted three points: first, that its own valuation (which was not based on actual cost) was a fair valuation; second, that too much weight had been given by the lower court to reproduction cost as an item in ascertaining value; and

third, that reproduction cost should not be estimated on the basis of spot prices but on a price level over a reasonable number of years. These three issues constitute all that the court had before it. Actual cost or prudent investment as against reproduction cost was not before the court. Therefore nothing that was said or done by the court in this case can make this decision a precedent for the doctrine that reproduction cost is the sole measure of value. The decision is a precedent for only two points. The first was that the findings of fact of a public utility commission as to valuation of a utility for the purpose of rate making are not conclusive and are reviewable by the courts in cases regularly before them. This had been established in many decisions covering a period of forty years and more. The second was that where the regulating commission has determined a valuation on a public utility's property by including the item of reproduction cost, some consideration must be given to spot reproduction cost. This case stands as a precedent only on these two points.

Mr. Justice Butler's opinion is not clear and is here and there somewhat ambiguous. All of the judges except Mr. Justice Brandeis, who wrote a dissenting opinion, concurred in the result. Mr. Justice Brandeis took exception to the court's support of the language concerning spot reproduction cost. But the court did not hold in favor of spot reproduction. It merely held that some weight should be given to spot prices in so far as the valuation included the item of reproduction cost.

Thus the conclusion must be reached that the Supreme Court has not "closed the door" on the prudent investment theory. Although the language of the court has led many to the opposite conclusion, the court's action has never given a reason for belief that it regards "reproduction cost" as the ultimate basis for valuation, but it has definitely indicated



that this is only one of the factors to be considered. However, the language of the court, *the dictum*, has received, in this case particularly, as much or more attention from the lower courts and utility commissions than has its action.

#### INFLUENCE OF SUPREME COURT DECISIONS ON LOWER COURTS AND STATE COMMISSIONS

While too much attention may be paid to dicta alone, their effect cannot be ignored, for frequently the dictum in a decision today becomes law tomorrow. The analysis of the foregoing cases on the basis of actual holdings is not for the purpose of ruling dicta out of all consideration. Dicta may indicate the attitude of judges. There is no doubt that certain of the Supreme Court judges today favor reproduction cost even at spot prices, if not as the sole basis, at least as a very important element in the determination of value. But dicta do not establish precedents that bind the court to the same extent that actual holdings do. Dicta may prove embarrassing in later cases of similar nature but the courts can easily dismiss such language as not being to the point and thus avoid violence to *stare decisis*. Yet it remains a persuasive factor. It is especially persuasive on lower courts and administrative boards. These tribunals seem to be as much influenced by what the court says as by what it does. Thus today the trend in lower court decisions and commission findings on the question of rates indicate that their understanding of Supreme Court decisions favor reproduction cost new less depreciation as the determining factor in establishing a rate base for a utility.

Some of these recent holdings and opinions are worthy of note. Thus the Nebraska State Railway Commission, speaking in 1927 in the matter of Omaha and Council Bluffs Railway and Bridge Company, cited and quoted from the opinion in *McCardle vs. Indianapolis Water Company* as

reaffirming the statement in *Smyth vs. Ames*, that the cost of reproduction at the date of valuation constituted evidence that must be considered in the ascertainment of value. In answer to a suggestion that this item might be ignored and that the holdings of the Supreme Court of the United States might be disregarded the commission said,

“We decline to follow this astounding suggestion. We shall be guided as heretofore by the decisions of the Supreme Court of the United States, and the Supreme Court of Nebraska. We shall not take time to discuss our duties at length but shall simply say that to follow the suggestion of the objectors would require a violation of our official oath. It is an expression of an idea subversive of all government.” <sup>58</sup>

Following this expression of loyalty to what it deemed the actual holding of the United States Supreme Court, the commission quoted with approval the language of the United States District Court in its opinion in the case of *Columbia Gas and Fuel Company vs. Columbus* in which the District Court said,

“Reproduction new less depreciation is the dominant factor in the ascertainment of fair value.” <sup>59</sup>

The Nebraska Commission did not hold reproduction cost new less depreciation to be the dominant factor, but it did hold that reproduction cost new must be given considerable weight. It distinctly held that original prudent investment alone was not the correct basis of valuation.

Other state commissions have been less definite in their language, but in the main they have declared in favor of according considerable weight to reproduction cost new less depreciation in determining value, and none but the Massachusetts Commission has definitely held out for actual

<sup>58</sup> P. U. R. 1928 A 689, 694.

<sup>59</sup> 17 F (2d) 630, P. U. R. 1927 C 639.

prudent investment as the sole element in determining valuation. The effect of Supreme Court decisions, particularly the effect of the dictum in the McCardle case, is seen in the recent work of the Wisconsin Commission and the Wisconsin Supreme Court. In 1923, before the McCardle decision, the latter maintained,

"... to hold that cost of reproduction was entitled to controlling or even considerable weight under present abnormal conditions appears to be unsound."<sup>60</sup>

But in 1927 with reference to the same utility the Supreme Court of Wisconsin found this statement contrary to the McCardle case and modified it so as to require valuation on the basis of present reproduction cost.<sup>61</sup> The Wisconsin Railroad Commission likewise gives evidence of a change since the McCardle case. Thus, according to the syllabus, the commission, speaking in the matter of *Monitowoc vs. Wisconsin Fuel and Light Company* said,

"Reproduction cost, original cost, and other elements must be given reasonable and proper weight and not merely nominal consideration in a valuation for rate making, but estimated reproduction cost at current prices is not the sole measure of value or even, in general, the dominant factor."<sup>62</sup>

The language quoted above indicates the attitude of the commission in its previous holdings. It gives reluctant support to the element of reproduction cost new. Nevertheless reproduction cost new as an element in determining value was given considerable weight in this case.

The following language from an opinion of the Supreme Court of Oklahoma is quite typical of the majority of state courts on the question of valuation,

<sup>60</sup> *Waukesha Gas and Electric Company v. Railroad Commission* (1923), 181 Wis. 281, 194 N. W. 846.

<sup>61</sup> *Ibid.* (1927), 191 Wis. 565, 211 N. W. 760.

<sup>62</sup> P. U. R. 1927 D 737.

"In determining the present fair value of a public utility for rate making purposes, neither original cost nor reproduction cost new considered separately, are determinative, but consideration should be given to both original cost and present reproduction cost, less depreciation, together with all the other facts and circumstances which would have a bearing upon the value of the property and from a consideration of all these a fair present value is to be determined." <sup>63</sup>

One thing is definite in this indefinite opinion. Actual investment is to be only one of many elements that determine value.

The United States District Courts likewise have always given support to reproduction cost new as an element in ascertaining value and we search their opinions in vain for anything that approximated support of actual investment as the sole basis of valuation. Thus in *Brooklyn Union Gas Company vs. Prendergast*, the court said,

"Original cost, expenditures for improvements, amount and market value of securities, earning capacity and operating expenses, together with other relevant facts, must be considered in determining fair value, as well as the cost of replacement less depreciation." <sup>64</sup>

The Massachusetts courts alone have consistently maintained capital honestly and prudently invested and devoted to a public service as their rate base. Under this doctrine

<sup>63</sup> *American Indian Oil and Gas Company v. Poteau* (1925), 108 Oklahoma 215, 217, 235, Pac. 906, 907.

<sup>64</sup> (1925) 7 F (2d) 628, P. U. R. 1926 A 412 at page 432. Other cases in which the McCardle decision has been cited are the following: *Re City Light and Traction Company* P. U. R. 1927 E 27 (Missouri). But the Commission here distinctly insists that cost of production is not the only factor thus concurring in the opinion of the Wisconsin Commission in *Monitowoc v. Wisconsin Fuel and Light Company*, P. U. R. 1927 D 737. A similar opinion was expressed by the Montana Commission in *re Havre Natural Gas Company*, P. U. R. 1927 D 811. See also *Kansas City Southern Railway v. United States*, 19 F (2d) 591.



the utilities of Massachusetts have prospered and the public has been well served.

Until recently utilities have apparently been reluctant to challenge this doctrine in the federal courts. But a Massachusetts case was recently brought into the federal courts involving the validity of this well established doctrine of valuation. In sustaining an injunction against the Massachusetts Commission the United States District Court found that the commission's valuation of the Worcester Electric Light Company on this basis alone was a denial of due process of law and that it was contrary to the doctrine of Supreme Court decisions. In the course of its opinion the district court quoted with approval the Supreme Court.

"in determining present value, consideration must be given to prices and wages prevailing at the time of the investigation; and, in the light of all the circumstances, there must be an honest and intelligent forecast as to probable price and wage levels during a reasonable period in the immediate future."<sup>65</sup>

It was anticipated that this case would ultimately be appealed to the Supreme Court by the commission. But by common consent the court referred the case to a master in equity who sustained the rate order while at the same time he repudiated the rate base used by the commission. He maintained that the company had the right to claim protection against regulation which would prevent it from earning a return upon the present value of the property. Since there was no evidence of confiscation and since the rates were sustained what was said is, strictly speaking, dictum. If the rates had not been sustained because of the valuation then his report would have been a real precedent, and the

<sup>65</sup> *Worcester Electric Light Company v. Atwill* (1927), 23 F (2d) 891, P. U. R. 1927 E 796, 798. The quotation is from *McCardle v. Indianapolis Water Company*.

commission would have doubtless carried the case to the Supreme Court to have the issue settled.

Although the controversy in the Worcester case did not result in a clear-cut decision on the point at issue it brings to the fore the conflict between the policy of the Massachusetts Commission and other methods of determining valuations. This conflict may ultimately lead to litigation before the Supreme Court which will then be confronted with the issue of reproduction cost versus prudent investment. Should the Supreme Court sustain the Massachusetts Commission which alone among the public service commissions has taken a firm stand on the policy of prudent investment as the rate base, it will have brought certainty out of suspense and order can then be brought out of chaos in the most important phase of the regulation of these agencies so essential to public welfare. If the Supreme Court does not reaffirm its own holding in the Georgia case and does not sustain the Massachusetts policy the outlook for order in rate regulation will be far from bright. Determining value for rate making purposes must be placed on an equitable and definite basis. Individuals may differ as to the respective merits of the reproduction cost and actual investment standards for determining value, but all are agreed that there is an urgent need for some more definite standard than we have now. With the single exception of the Georgia decision the effect of Supreme Court decisions on rate regulation has resulted only in confusion and uncertainty. Judge Learned Hand characterized the work of the courts in these rate making cases as follows,

"there is no rigid principle at all, but that under the guise of some soothing phrase, as reasonable value, all difficulties of theory shall be veiled, and embarrassing commitments avoided. Value shall in each case be determined at sums which shall not too much outrage the susceptibilities of either side, by the com-

forting doctrine that all principles, however conflicting, shall have a just recognition.”<sup>66</sup>

The courts have thus become an important factor in regulation, and an uncertain one. The commissions cannot function adequately until they understand thoroughly the limitations put upon them by the courts. The latest decisions of the Supreme Court on the very important question of fixing the rate base have been misinterpreted by the commissions as a whole and by many of the lower courts. These are now upholding the contention of the utilities that no matter how much actual prudent investment of money there has been in a public service the rates must be based on what it would cost to reproduce that property new at the present high prices. If such a rule is applied to the power industry as a whole the carrying charges allowed will be so much increased that the public cannot expect any very considerable rate reduction for a long time. Those who believe in public ownership will then be given a very strong argument in favor of the construction of all future plants by the state or municipalities. The lack of certainty as to what the Supreme Court will finally do is one of the elements in the present crisis of control.

#### CONCLUSION

It is beyond the limits of this chapter to discuss all of the legal and constitutional factors in the regulation and control of public utilities that call for judicial review and certainly impossible to indicate except in the broadest outline the utility law that has been developed by these judicial decisions. It is apparent however even from this limited study that under the common law of the several states, a legal system in which judicial decision is inherent and preeminently powerful, and under our constitutional system

<sup>66</sup> Have the Bench and the Bar Anythng to contribute to the Teaching of Law? 1926, 24 Michigan Law Review 466, 473.

with its more or less elaborate and definite yet vague guarantees, the judiciary is extremely powerful in utility control.

What shall be the status and control of electric power presents one of the most urgent social and economic questions of the hour. Electricity is an industry vitally affected with a public and social interest. Light and power have become social and economic necessities. This service upon which millions depend must be available at a fair price. There must be no possibility of public exploitation. The difficulties that have beset the commissions and the courts in the task of regulating privately owned utilities and the involved and costly litigation that has inevitably ensued, particularly in the regulation of their rates, give to those who believe in public ownership of these remaining natural resources, one more persuasive argument.



## CHAPTER III

### STRUCTURE, FUNCTIONING AND CONTROL OF HOLDING COMPANIES

STRICTLY speaking, a holding company may be defined as a corporation formed for the express purpose of controlling other corporations by the ownership of a majority of their voting capital stock. In common usage the term is applied to any corporation which does in fact control other corporations, commonly referred to as subsidiaries. This holds regardless of the express purpose for which it may originally have been formed and regardless of whether its control is exercised through ownership of a majority of voting capital stock or through some other of the various methods of domination that are available. It is in this more popular sense that the term is here used.

This definition excludes investment corporations and trusts which invest in the securities of other corporations without in fact exercising any control over them. It includes, however, a wide variety of types of holding companies which may conveniently be divided into two groups, as follows:

1. Holding Companies deriving their profits exclusively from interest and dividends on securities owned, and from transactions with the public, which for convenience will be referred to here as Investment Holding Companies.

2. Holding Companies deriving profits from the same sources as Investment Holding Companies and also from transactions of any character with their subsidiaries, which for convenience will be referred to here as Management Holding Companies.

All types of holding companies have certain general characteristics, advantages and disadvantages regardless of whether they operate in the public utilities, commercial, in-

dustrial or banking field. It may be profitable first to review briefly these general characteristics.

#### A. HOLDING COMPANIES IN GENERAL

The advantages of the holding company as a financial device are enumerated by Noyes as follows:

"1. It furnishes a readily available and effective method of controlling several corporations for a common object.

"2. It may be employed to perpetuate corporate control. Financiers holding the control of corporations may transfer their shares to a holding corporation. Death or disagreement will not then affect the control. In many cases also a holding corporation may take the place of a voting trust, which always is limited as to time.

"3. The holding corporation permits the capitalization of controlling stock interests. The control of a corporation having a capital of twenty million dollars—as an illustration—requires a permanent investment of more than ten million dollars, assuming the stock worth par. If a holding corporation is formed with a capital equal to the investment, the shares may be transferred to it and forty-nine per cent. of its stock sold. The original controlling stockholders, by retaining control of the holding corporation, retain control of the original corporation."<sup>1</sup>

##### 1. "*Common Objects*"

Some of the "common objects" for which the holding company form of control has been found advantageous include compliance with the requirements of state laws; carrying on of related activities not authorized by the charter of a particular corporation; benefits under taxation laws, as where under the Federal Income Tax laws the possibility of filing consolidated returns may enable the loss of one company to offset in part the profit of another, reducing the total tax payable; embarking in new and uncertain

<sup>1</sup> Noyes, *Intercorporate Relations*, Section 285.

enterprises without involving the parent company in loss beyond the amount of its own investment; and facilitating the financing of subsidiaries.

## *2. Financing*

Facilitating the financing of subsidiaries is perhaps the outstanding advantage of the holding company form of organization in every field in which it is used. The diversity of risk that results from combining the income of companies operating under different geographic, climatic and industrial conditions; the greater magnitude of the periodic sales of securities to meet the combined needs of the subsidiaries and the correspondingly greater attractiveness of such offerings to underwriting agencies; the opportunity for the holding company to make itself better and more favorably known in the great centers of the money market than is possible for a small, local subsidiary company, all combine to make the financial aid which the holding company can extend to its subsidiaries an outstanding advantage of this type of organization.

## *3. Pyramiding*

The third advantage of the holding company, as listed by Noyes above, is the possibility of "capitalizing controlling stock interests." This is an unquestioned advantage from the point of view of the controlling interests since it affords them opportunity to control a larger amount of property and business than would otherwise be possible with the capital at their disposal. It may be highly advantageous also to the investing public and to society at large. When used within reasonable limits it enlarges the scope of the ablest and most progressive managers and entrepreneurs; makes available additional types of securities of vary-

ing grades of risk and return, suitable for the needs of various classes of investors; and finally it facilitates the development of large scale operations such as have played so considerable a part in decreasing production costs in the United States.

It is obvious, however, that the extension of this principle beyond conservative limits may readily convert these advantages into the disadvantages of "pyramiding." This applies particularly when it is combined with the classification of capital issues into fixed interest-bearing securities, priority or preferential stocks and various kinds of common stocks, with and without par values and voting rights.

It should be pointed out that "pyramiding" is a legitimate procedure in itself, although valid objection may be made to it as a financial policy on the ground that it tends to irresponsibility in control and to the development of a speculative, rather than an investment, attitude on the part of those owning the controlling stocks.

The more serious dangers of "capitalizing controlling stock interests" and of "pyramiding" lie in the opportunities which they may afford for abuses through manipulation of accounts, secrecy as to financial conditions, concealment of assets, liabilities, profits or losses, diversion of profits to controlling interests through excessive salaries or clandestine transactions between companies or individuals. In competitive industry such abuses affect only the respective rights of the various classes of security owners and creditors. They cannot for any long time affect the public interest in the prices charged by the holding company and its subsidiaries for goods or services since these prices are fixed by competition as long as the operation of the law of supply and demand is free and unrestrained.



## B. ELECTRIC UTILITY HOLDING COMPANIES

The advantages and disadvantages of holding companies in general are characteristic also of the public utility holding companies, including electric utility holding companies. The outstanding economic characteristics of the electrical utility industry are its high ratio of capital required to the value of its annual production (4.29 to 1, compared to 0.716 to 1 for manufacturing industries in general<sup>2</sup>); and the vast annual requirements of new capital for the rapid expansion of the electrical industry (estimated at \$800,000,000 out of total security sales, including refunding issues, of \$1,641,000,000<sup>3</sup> for 1928). As a result, the advantages and disadvantages relating to the financial aspects of the holding company are greatly accentuated and magnified.

In addition, because of the essentially monopolistic character of the industry and the absence of control of prices by free competition, these advantages and disadvantages have special aspects and results in the electric utility industry to which further consideration will be given below.

1. *Extent of Holding Company Control*

Nor is the relation of the holding company to the electrical utility industry of secondary importance. The Federal Trade Commission showed that 74.6 per cent of the total energy generated in the United States in 1924 was generated by companies under holding company control.<sup>4</sup> In this compilation the New York Edison Company and the United Electric Light and Power Company, now subsidiaries of the Consolidated Gas Company of New York; the Brooklyn Edison Company, absorbed in 1928 by the Consolidated Gas Company; and the Philadelphia Electric Company,

<sup>2</sup> Nash, *Economics of Public Utilities*, p. 17.

<sup>3</sup> *Electrical World*, January 5, 1929, p. 41.

<sup>4</sup> Federal Trade Commission, *Control of Power Companies*, pp. 36, 37, 40.

absorbed in 1927 by the United Gas Improvement Company, were listed as "independent companies." If the figures for these four companies were added to the 74.6 per cent referred to above the result would be 81.9 per cent of the total energy generated in the United States.\*

No official figures are available for later years. But there can be no doubt that any later compilation would show an increased proportion of holding company control. For, in addition to the absorption of the Brooklyn Edison and the Philadelphia Electric companies just mentioned, purchases, mergers and other extensions of control have proceeded at an unprecedented rate. The *Electrical World* for January 7, 1928, reported 828 changes in utility control during 1927, and that for January 5, 1929, 893 changes during 1928. While some of these were merely reorganizations or changes in financial structures, many of them were extensions of control over independent units.

But even this large measure of control does not show fully the relative importance of the holding company in the electric utility industry. In addition to the growth of the holding companies themselves, the last few years have seen a great development of investment corporations, with diversified permanent investments in minority stock interests in various holding and operating companies. The boards of directors of these companies generally interlock with those of various holding company groups. New communities of interest and spheres of influence are thus being created and extended over otherwise independent units. The final result of this movement cannot be predicted. But there can be no doubt of its importance when the amount of capital involved is considered. The total capitalizations of a few of these companies are approximately as follows: <sup>5</sup>

\*The accompanying map shows the extent of interconnections in 1928. This is an index to the consolidations taking place under holding companies.

<sup>5</sup> These figures are necessarily approximate. They are based upon the latest statements of capital or of capital and surplus available in security



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INTERCONNECTIONS AS AN INDEX TO ACTIVITIES OF HOLDING COMPANIES.





	Capitalization	
	Outstanding	Authorized
Electric Investors, Inc.....	\$ 40,000,000	\$160,000,000
American Superpower Corporation.....	100,000,000	125,000,000
Utility Equities Corporation	22,000,000	38,500,000
United Corporation.....	152,000,000	425,000,000

## 2. *Advantages—Interconnection*

In addition to the "common objects" for which the holding company may be used to control corporations in general, the electric utility industry presents a special advantage which may be promoted by this form of organization. This consists in the benefits that may be secured through interconnection of adjacent electric systems. Notwithstanding that there has been some exaggeration in popular writing of the possibilities and advantages of "superpower" development, real economies and improvements in service are possible and are being realized through interconnection. Among these are the improvement in station load factor resulting from the diversity of connected loads; the substitution of large modern high-efficiency generating stations for small local low-efficiency units; the reduction in requirements for spare or reserve capacity; and the increased reliability of service resulting from the possibility of transferring power in emergencies from one part of the interconnected system to another.

These advantages, it is true, can be and often are realized through contractual relations between adjacent companies which are completely independent financially. But there can be no doubt that unity of corporate policy, resulting

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advertisements, announcements in newspapers and periodicals, etc. Allowance is made for no par securities at estimated amounts per share based upon cash sale prices, option warrant prices and/or liquidation values, as published. In two instances authorized preferred stock issues, of which none has been issued and no announcement of terms published, have been included in authorized capitalization arbitrarily at \$50 per share.

from holding company control, facilitates the completion of such arrangements and enables the maximum efficiency to be obtained from them in actual operation.

It should of course be borne in mind that this advantage has no application whatever to the holding company which controls a group of widely scattered local units between which interconnection is out of the question.

### 3. *Advantages—Financing*

As has already been pointed out, because of the economic characteristics of the electric utility industry and the relatively greater amount of total capital and of new capital required for its development than in other industries, the financial aspects of the holding company form of organization are of special importance. Indeed it is probably not too much to say that the striking development of the industry during the past twenty-five years would have been absolutely impossible without the financial resources which have been made available through the use of the holding company device. In this field the holding company has made an indispensable social contribution of outstanding value.

### 4. *Pyramiding Earnings*

Just as the advantages of the holding company form of organization have been magnified because of the special economic characteristics of the electric utility industry, so its disadvantages have been correspondingly accentuated. "Capitalizing controlling stock interests" has been found particularly adaptable to this field in which capital charges absorb a large proportion of total revenues and where there has been for many years uninterrupted growth and almost entire absence of declines, in both gross and net income. As a result some of the most striking examples of "pyramid-

ing” in the entire field of corporate finance are to be found in this industry.

The mechanism of “pyramiding” and its effect upon earnings when combined with classification of capital issues have often been illustrated both by theoretical examples and by examples of actual financial structures. To illustrate by the simplest form of financial structure, 8 per cent on \$1,000,000 will pay 5 per cent interest on \$500,000 of bonds and leave \$55,000 or 11 per cent available for a common stock equity of \$500,000. By superimposing holding companies on holding companies and utilizing various types of interest bearing, preference dividend, priority and ordinary common stock issues, the process may be carried on *ad libitum*, the rate of earnings on the equity of each holding company being higher than that of the next company below. The Federal Trade Commission, for example, developed in detail an imaginary financial structure to show how 8 per cent on a total investment of \$1,000,000,000 in a group of properties might readily become 138 per cent on a controlling equity of \$12,500,000.<sup>6</sup>

### 5. *Pyramiding Control*

Similarly—since bonds and debentures customarily have no vote; since preferred stocks frequently have none; and since nonvoting common shares and voting shares of low par value have come into vogue—“pyramiding” of control can be carried to almost any desired limit. The Federal Trade Commission refers to one case in which an investment of a banking company of less than \$1,000,000 in the top holding company of a pyramid effectively controlled more than \$370,000,000 of operating capital.<sup>7</sup>

A good example of the pyramid type of structure, using

<sup>6</sup> Federal Trade Commission, *Control of Power Companies*, pp. 173, 174.

<sup>7</sup> *Ibid.*, p. 197.

\$1 par value stock as the mechanism of control, is the Lexington Utilities Company, itself a subsidiary of the Kentucky Utilities Corporation which in turn is controlled by the International Utilities Company.

The consolidated balance sheet of the Lexington Utilities Company and subsidiaries as of April 30, 1928, showed capital issues outstanding as follows: <sup>8</sup>

Bonds.....	\$4,596,250
Preferred Stock, Par Value \$100 per share, with full voting rights, 1 vote per share (20,624 votes).....	2,062,400
Common Stock, Par Value \$1 per share, 1 vote per share (100,000 votes), all owned by Kentucky Utilities Corporation.....	100,000

It should be noted that the voting stock required for control in any given case need not necessarily be owned wholly by the holding company. The controlling holding may include the holdings of the holding company, of a controlling or affiliated banking group or other corporation and of individuals and members of the families of individuals connected with one or more of the affiliated companies or acting otherwise in concert.

Nor does such controlling holding necessarily comprise a majority of the voting stock of the subsidiaries. If the stock of a subsidiary is widely held in small units, a concentrated holding of substantially less than a majority may suffice for effective domination. The inactivity and indifference of stockholders who buy stocks solely for investment or speculation is notorious. So long as expected dividends or price levels are reasonably well maintained, voting rights

<sup>8</sup> Moody's Manual of Public Utility Securities, 1928. Note that the *Electrical World*, July 7, 1928, reported that the share capitalization of this company had been increased to \$5,000,000 of voting preferred stock, \$100 Par Value (50,000 votes), and \$250,000 of common stock, \$1 Par Value (250,000 votes.)



are apt either to be completely disregarded or to be exercised only by returning proxies to the committee of the controlling interests when requested. This condition may in fact be a sufficient explanation of the effectiveness of the domination exercised over their controlled companies by certain holding companies whose stock holdings in their subsidiaries are relatively small. Thus, the stock holdings of the Electric Bond and Share Company in its controlled domestic holding companies on April 30, 1925, were as follows: <sup>9</sup>

	Per Cent of Voting Rights Owned
American Gas and Electric Company .....	6.68
American Power and Light Company .....	22.59
Carolina Power and Light Company .....	14.67
Electric Power and Light Corporation.....	16.24
Lehigh Power Securities Corporation.....	12.68
National Power and Light Company.....	11.95

Nevertheless the Federal Trade Commission found that it "dominated their policies and those of their numerous power producing subsidiaries. This domination is evidenced generally by the following facts:—(1) The chief officers and directors of the Electric Bond and Share Company were directors or officers of these holding companies; (2) the presidents of these companies were in most cases Electric Bond and Share Company men; (3) S. Z. Mitchell, president of the Electric Bond and Share Company, was chairman of their respective boards of directors or of the executive committee; (4) their general offices were identical in location with those of the Electric Bond and Share Company,—namely, 71 Broadway, New York City; and (5) the Electric Bond and Share Company had service contracts for

<sup>9</sup> Federal Trade Commission, *Control of Power Companies*, p. 7.

their electric power subsidiaries which amounted to substantial control of these subsidiaries.”<sup>10</sup>

It appears also that control may be obtained in some cases through managerial contracts and directorial influence, without even minority stock holdings as large as these. This may be perpetuated through the excellence of the services rendered and the satisfaction given by such services to the holders of the controlling voting stocks. This has apparently been true of the group of companies controlled by Stone and Webster, Incorporated, although it cannot be conclusively established without disclosure of the identity of the stockholders of Stone and Webster, Incorporated.

Such domination may be advantageous from the point of view of the stockholders of the controlled companies. But it does not necessarily follow that the possibility of abuse of the interests of investors and consumers through complication of intercompany relations and transactions and lack of publicity as to resulting profits, as well as the danger of unfavorable effects on commission regulation and public relations, are less under this method of control than under other methods based on ordinary stock holding.

It should also be noted that the recent tendency of organizations of this type is in the direction of the establishment of holding company control of supervised utilities, in order to protect their managerial control of these companies from loss through purchase of stock control by rival groups. This tendency is exemplified in the case of Stone and Webster, Incorporated, by the formation in 1925 of the Engineers Public Service Company, which by the end of 1928 had acquired control of the two largest electric utilities of the Stone and Webster group: the Virginia Electric and Power Company and the Puget Sound Power and Light Company, as well as a number of small companies in the group.

<sup>10</sup> *Ibid.*, pp. 6, 7.

## 6. *Disadvantages of Pyramiding*

The disadvantages of pyramiding, applicable to holding companies in general, as previously discussed are all applicable to the electric utility holding company. In fact the possibilities of abuse of the interests of investors are especially serious in this industry because of its great capital requirements.

In addition a special disadvantage applies to this field in the possibility of abuse of the interests of the consuming public. In the absence of price control through the operation of free competition, speculative activities by controlling groups, complication of corporate structures and lack of adequate publicity as to financial results afford both incentives and opportunities to avoid effective regulation of rates.

### C. MANAGEMENT UTILITY HOLDING COMPANIES

The management type of utility holding company earns profits not only from its investments, but also from transactions with its controlled companies. It generally furnishes services of various kinds to its subsidiaries for fees sufficient to cover the cost of service plus a profit. It may also sell materials, equipment, property and securities to the companies which it dominates.

All of the advantages and disadvantages of electric utility holding companies of the investment type apply to the management type of company. In addition it has advantages and disadvantages peculiar to itself.

#### 1. *Advantages*

Among these peculiar advantages the following may properly be claimed for this type of company:

1. *Economy in Group Purchasing.* Materials and equipment can be standardized, requirements combined and purchased in large quantities by skilled purchasing organizations at prices lower than would otherwise be possible, thus reducing both operating and construction costs.

2. *Expert Management.* A central staff of operating engineers, accountants, commercial men, public relations men and executives can be provided of a higher grade than could be obtained by the individual units separately. Local operating organizations can be stimulated through supervision by this staff and through comparisons of results obtained in all departments of each unit with the results obtained in other units and in past periods and with standards set up under a centrally controlled budget system.

3. *Expert Engineering and Construction.* A central staff of engineers and constructors can be maintained of higher grade than could be obtained by the individual units separately. Services can thus be made available for special construction of unusual character and magnitude. Technical minor work handled by the local operating organization can be standardized and supervised.

Important advantages and economies can unquestionably be attained and are attained in many cases by these services. If the proper proportion of the benefit of these advantages is passed on to the consuming public in the form of lower rates, such holding companies are advantageous to the general public as well as to the controlling interests and the investor.

It should be pointed out, however, that the attainment of these advantages is not automatic and does not always follow from control by a holding company of the management type. Thus the combination of the functions just named and of the exercise of control may result in the serv-



ices being furnished whether the operating companies desire them or not. They may be of higher or lower grade, or more or less costly, than services that the operating company could secure elsewhere. The maintenance of the desirable relation of client and professional and of the desire to please the client on the part of the members of the central staff is not always successfully accomplished. Instead, the representatives of the holding company may come to feel themselves endowed with some portion of the authority of control and they may adopt a domineering attitude toward the local organization which injures rather than helps organization morale.

## *2. Disadvantages*

The disadvantages of the management type of electric utility holding company result from the special complexity of corporate organization and relations to which it gives rise. Large sums of money and considerable profits may pass between various corporations of a group which do not deal with each other at arm's length because they are all controlled by the same management. In each corporation of the group the controlling management, the investors in each of the various kinds of securities "held by the public" and the consuming public may have different interests. In such circumstances—especially if outside investors and the public are not kept fully informed by the most complete publicity—the opportunities for manipulation and abuse are obvious. Furthermore, the possibility of taking profits on intercompany transactions, without relying upon returns on investments in the securities of subsidiaries for earnings, strengthens the tendency toward irresponsibility and a speculative attitude on the part of the controlling interests.

### 3. *Speculation*

That this tendency is real and not imaginary is clearly indicated by the speculation in electric properties and securities that has occurred during the past few years. Prices have been paid for properties beyond the wildest dreams of their earlier promoters and owners and indeed beyond any discernible relation to the amount and value of property involved. Fortunes have been made by brokers buying and selling properties.

Many of these transactions have been of such a character that no public disclosure of their terms has been required. But by way of example of the disregard of real values in the purchase of properties, the New York Public Service Commission in November, 1928, disapproved the proposed purchase of the Ticonderoga Electric Light and Power Company "at more than four and one-half times any possible valuation thereof based on the appraisal, which valuation is considerably higher than book value."

Meanwhile holding company stocks have been bought and sold on the stock exchanges in tremendous volume and the prices paid have been driven up to levels which can only be explained on the ground of the most tremendous speculation the industry has ever known.

### 4. *The Need for Publicity*

In view of the complications and opportunities for abuse which have been presented as characteristic of the electric utility management holding company, more than usually complete financial reports and publicity would appear to be justified in order to afford a true picture of the financial situation to investors, to interested governmental authorities and to the public. It has been noted by many students,

however, that the industry as a whole has not adequately recognized this need.

In an address before the annual convention of the American Gas Association at Chicago, October 12, 1927, Mr. Henry R. Hayes, president of the Investment Bankers Association of America, quoted from the annual report of the Committee on Ethics and Business Practice of his association for 1924 as follows:

"From the beginning, this association has stood for truthful representation in the offering of securities, and truthful representation has been construed to mean, not only that all statements made should be accurate, but also that the information given should be complete and comprehensive."

Mr. Hayes added:

"The frequent discussion of this subject has undoubtedly resulted in marked improvement in the character of the advertising and offering circulars of the members generally. The improvement, however, has not been so marked in the offering of securities of public utility holding companies."

Mr. Hayes also quoted the report of the Committee on Ethics and Business Practice to the Washington Convention of his association in 1923, as follows:

". . . Our committee approves as better practice that members of the association in their offering circulars concerning securities of holding companies (which have only a stock ownership in their subsidiary companies) set forth:

- (a) A consolidated statement of capitalization or a consolidated balance sheet.
- (b) A consolidated statement of earnings.
- (c) An income or profit and loss account of the holding company.

Furthermore, for the convenience of those who may desire to make detailed studies of the credit of a holding company and its

subsidiary companies, there should be made readily accessible, through annual reports, statistical manuals and other media, the following information:

- (a) The securities of the subsidiary companies owned by the holding company and those owned by the public.
- (b) Statements for each subsidiary company giving earnings, expenses, maintenance expenditures and reserves, fixed charges, dividends, assets, capitalization and other liabilities."

If the above standards are applied to the reports of the electrical utility holding companies it will be found that few of them conform. The publication of separate statements of the subsidiary company or companies performing services of various kinds for the controlled utility companies, and of the earnings and expenses of the holding company arising from its own transactions with its controlled companies, have been the exception rather than the rule.

Even these standards are not adequate to give a complete understanding of the situation in those cases where services are furnished not by the holding company or a direct subsidiary, but by some controlling or otherwise affiliated banking or other group or a subsidiary thereof. In such cases only a complete disclosure of the results of intercompany transactions by separate statements of all of the affiliated companies of the group will suffice.

It is probable that the investigation of the public utility industry by the Federal Trade Commission, authorized by Congress under the so-called Walsh Resolution early in 1928 and still in progress at this writing, may contribute to clearing up much of the mystery that now surrounds this subject. It is worthy of note that such an investigation by a federal body should have been necessary in order to produce these results. The leaders of the public utility industry, the



official spokesmen of its trade organizations and joint committees have insisted day in and day out that the industry is not only willing but anxious to place the facts regarding every aspect of the business before the public. For example, the official statement issued by the National Electrical Light Association in convention assembled at Atlantic City on June 6, 1928, said:

“Recognizing that lack of knowledge is as unfair to the public as it is harmful to the industry, the electric utilities consider it their responsibility to place all the facts before the public.

“It is for these reasons that the National Electric Light Association, among its other important functions in the development of the electrical industry, some years ago assumed the responsibility for and adopted the policy of preparing and diffusing as widely as possible, full, accurate and timely information on all phases of the business.”

Notwithstanding this attitude, the holding companies have failed to publish reports which would adequately disclose their intercompany relations and transactions. In addition they have consistently and vigorously opposed all efforts to secure the facts as to the relation of the cost of services rendered by them to their controlled utilities and the fees collected for such services. The published statements of the Electric Bond and Share Company, for example, contain no information concerning the proportion of its earnings that is received from interest and dividends on securities owned by it and the proportion of earnings and expenses applying respectively to its financial, engineering, management and other services to, and transactions with, the operating subsidiaries of its controlled holding companies. It was reported in the *United States Daily*, October 31, 1928, that statements were presented in evidence before the Federal Trade Commission on the previous day purporting to show that the total expenses of the

Electric Bond and Share Company during 1927 were \$6,613,-973.47; and that the total earnings for 1927 were \$18,513,-299.85. The earnings during 1927 from various sources were also reported to be as follows:—

Earnings from Dividends.....	5,407,553.21
Earnings from Interest.....	3,427,015.60
Earnings from Commissions.....	1,288,216.01
Earnings from Supervision Fees.....	8,084,956.06
Earnings shown under Profit and Loss	
Account .....	288,080.46 <sup>11</sup>

It was shown in the report of the Federal Trade Commission on *Control of Power Companies*<sup>12</sup> that the Electric Bond and Share Company owned complete voting control of two construction companies and one office building company. A still further breaking down of the dividend item above and a study of the separate statements of these companies would presumably be necessary to determine the total earnings from transactions with controlled companies.

The Electric Bond and Share Company cooperated with the Federal Trade Commission in its investigation up to the point of disclosing the above and other general information, but when opportunity was sought to examine its operating expense ledgers, which would presumably be the source of the facts as to the cost of its services for which it received fees, the company refused to accede and to divulge this and certain other information. Court action was instituted by the Federal Trade Commission to compel the furnishing of the information. In the answer of the Electric Bond and Share Company to the petition of the Federal Trade Commission in this action numerous impor-

<sup>11</sup> *United States Daily*, October 31, 1928. There is a discrepancy of \$17,278.51 between the sum of these figures and the total earnings quoted above, the explanation of which does not appear in the report in the *United States Daily*.

<sup>12</sup> Page 6.

tant constitutional and technical questions were raised as to the jurisdiction of the commission and as to the validity of the statute and resolutions under which the commission claimed to be acting. These objections included among others the contention that the demands of the commission, if enforced, would deny adequate protection to the right of the company "to prevent inspection and publication of any particular item or voucher, and the unauthorized and illegal compulsory disclosure and subsequent publication of what constitute, in fact, trade secrets and other private matters."

This same absence of complete information regarding the cost of services rendered for fees has characterized the reports of the other companies of this type, even where the corporate relationship is made entirely clear. It is impossible to find in the reports of the Public Service Corporation of New Jersey a statement of the earnings and expenses of its subsidiary, the Public Service Production Company; or to discover in the reports of the United Gas Improvement Company a statement of the earnings and expenses of its subsidiary, the U. G. I. Contracting Company. Nor do the reports of these holding companies show the proportion of their earnings derived from the profits of the production and contracting companies respectively on their services to affiliated utility companies. It may be noted further that both the production and contracting companies were recently absorbed in the United Engineers and Constructors, Incorporated. Another illustration is that of the American Water Works and Electric Company whose reports in no way disclose separately the earnings from the Water Works and Electric Securities Corporation and the American Construction and Securities Company.

Similarly the published reports in many cases do not

make possible a complete understanding of either the corporate relationship or the amount and disposition of profits arising from intercorporate transactions. By way of illustration, this applies to the relations and transactions between the companies of the Stone and Webster group and Stone and Webster, Incorporated, and the recently organized Stone and Webster Engineering Corporation; to those between the companies of the Associated Gas and Electric Company group and the J. G. White Management Corporation, the J. G. White Engineering Corporation and J. G. White and Company; and also to those between the companies of the Consolidated Gas Company group of New York City, and Thomas E. Murray, Incorporated (named for the recently resigned senior vice president of its principal subsidiary, the New York Edison Company), etc., etc.

This is not to imply that the companies above have made unreasonable charges for services rendered to their affiliated corporations or have made charges where no such services were rendered. As a matter of fact the financial, engineering and management services rendered by most of the organizations named above are generally recognized to be of the highest grade. So far as their customary charges for services have been revealed they would appear to be reasonable when compared with charges for similar services by independent organizations, so far as can be judged without knowledge of the costs actually assumed in earning them. Thus the customary general service or management supervision fee of the Electric Bond and Share Company is stated to be 1.6 to 2 per cent of the gross earnings of each client company. The special engineering fee charged by this company for design work, when requisitioned by its supervised companies, is said to be the total of the actual engineering salary cost, supply cost and traveling expense in-



curred on the work. The fees of its subsidiary construction companies are said to be 5 per cent on the first \$200,000 of cost, 4.5 per cent on the next \$800,000 of cost and 4 per cent of cost in excess of \$1,000,000.<sup>13</sup>

Similarly the customary fees prevailing in the Stone and Webster group for consulting engineering services are stated to be the actual salary cost of the work done, plus such proportion of the general expenses of the Boston office as are incident to such service, plus traveling and other incidental expenses. For designing and construction supervision a percentage fee on the cost of work is charged depending on the character and the magnitude of the work; and for managerial service a fee consisting of an annual retainer of \$3,000 plus 2.35 per cent of the client's gross earnings.<sup>14</sup> All of these charges appear to be reasonable, so far as can be judged without knowledge of the costs actually assumed in earning the specified fees.

The point, however, is that the cost of rendering these services and the profits earned therefrom have not been disclosed separately in published reports. Despite the constant insistence that all of the facts were being laid before the public, a Federal investigation has become necessary to bring about an understanding of the situation, and the investigators are obliged to proceed in the face of the contention by one of the largest holding companies that the records of these transactions "constitute, in fact, trade secrets and other private matters."

### *5. Opportunities for Manipulation*

This continued secrecy and the insistence that the holding companies shall be the sole judges of the reasonableness

<sup>13</sup> Federal Trade Commission, *Control of Power Companies*, pp. 74, 75.

<sup>14</sup> *Ibid.*, pp. 184, 186.

of the profits arising from their transactions with their controlled utility companies, without regulation by the states or knowledge by the public, appear especially unfortunate. The opportunities for manipulation and for increasing the profits of the controlling interests without adequate consideration of the interests of other security holders and investors and the consuming public are obvious. Furthermore, figures that have been published in decisions of various public service commissions so that they may be compared with the apparently reasonable charges referred to above, demonstrate clearly the lack of any established standards for reasonable charges, the extreme variation in such charges by different controlling groups and the apparent unreasonableness of some of the charges made.

Reference has been made above to the Electric Bond and Share Company service fee of 1.6 to 2 per cent of gross revenue and to the Stone and Webster fee of \$3,000 per annum plus 2.35 per cent of gross revenue. For comparison, the Nebraska Railroad Commission in 1926 called attention in one of its decisions to the fact that the Northwestern Public Service Company was paying to its holding company, the National Electric Power Company, or its subsidiary, the Electric Management and Engineering Corporation, a management fee of 5 per cent of its gross revenue.<sup>15</sup> The reports filed with the Public Service Commission of New York show that the Buffalo Niagara and Eastern Power Corporation collects a management fee of 5 per cent of gross revenues from its subsidiaries, part of which is charged by the subsidiaries to their capital accounts and part to their operating expense accounts. The actual amounts of these fees for 1927 were as follows:—

<sup>15</sup> Nebraska Railroad Commission Annual Report, 1926, p. 301.

Niagara Falls Power Com- pany.....	385,465.47
Buffalo General Electric Company.....	615,258.55
Niagara Lockport and On- tario Power Company ...	429,338.86
Tonawanda Power Company	49,131.61
Western New York Utilities Company, Incorporated..	52,795.23
<hr/>	
Total.....	\$1,531,989.72

Equally large variations will be noted when engineering and construction service fees are compared with the cost plus overhead and 4 to 5 per cent bases of charging referred to above. Thus the Wisconsin Railroad Commission *in re* Wisconsin Fuel and Light Company (P. U. R. 1927 E 212) disapproved a charge to Fixed Capital Accounts of 10 per cent of the cost of construction work to represent the services of the Interstate Fuel and Light Company and/or the Utilities Operating Company in connection with engineering and construction. In the cases of the City Water Company of Marinette and the City Water Works Company of Merrill the same commission disapproved a charge of 15 per cent of the cost of all construction work for services performed by the American Construction and Securities Company.<sup>16</sup>

The Nebraska Railroad Commission in the Northwestern Public Service Company case previously referred to reported that this company was charging to fixed capital 15 per cent of the cost of additions and betterments for engineering, crediting the Electric Management and Engineering Company, a subsidiary of the controlling holding company, the National Electric Power Company. To quote the commission:

<sup>16</sup> Wisconsin Railroad Commission, Cases U-3540 and U-3541, decided July 19, 1927.

"From June, 1924, until July, 1925, 5 per cent of the cost of labor and material of additions and betterments to the properties was added for engineering. Beginning August 1, 1925, 15 per cent was added to the plant account and credited to the engineering company. . . . 15 per cent of the cost of material and labor as an engineering charge for all classes of property added to the plant is, in our estimation, excessive particularly when part of the engineering is locally done."<sup>17</sup>

Nor do the opportunities for abuse reside alone in the wide range and uncontrolled discretion of these intercompany charges for services. Equally important is the interpretation placed in actual practice upon the terms of the intercompany contracts under which these charges are made. Of two companies charging identically the same percentage fee and performing service of similar character, administrative interpretations by officers of the controlling company, which would be binding on employees of the controlled companies at pain of loss of employment, might readily induce wide variations in the amount of profit earned, as based on the proportion of the cost of the services rendered and assumed by the engineering and management organization furnishing such services. Thus in one case the management company might actually pay the salaries of a number of the executive officers of the operating company and absorb the salary cost of managers, purchasing agents, accountants, operating engineers and others employed in the central office. In another case the management company might assume only the salaries of its central office executives and allow the operating company to pay both its own executive salaries and the salary cost of the time of all engineers, accountants, purchasing agents and others employed on work of the operating company. In connection with engineering charges, the amount of engineering "locally

<sup>17</sup> Nebraska Railroad Commission, Annual Report, 1926, p. 297.



done," to use the words of the Nebraska commission quoted above, may be the controlling factor in fixing the profit earned. The actual effect of these administrative interpretations can only be ascertained by examination of the records of cost incurred by the holding company in connection with the services for which its fees are received. It is these costs which are claimed by some of the holding companies to be "trade secrets and other private matters."

Nor is evidence lacking that some abuses have actually occurred. The Public Service Commission of Indiana was of the opinion that such abuse existed after its investigation of the Southern Indiana Gas and Electric Company case. This company was found to be paying to the Commonwealth Power Corporation 3 per cent of the cost of additions to its railway properties, and 6 per cent of the cost of additions to its electric, gas, heating and other properties for engineering; and 2 per cent of its gross earnings for supervision of management. In this case the Indiana commission said:

"We consider this plan simply a process of milking the patrons of the utility and directly obtaining an enhanced return on its investment. Sooner or later, patrons who are subjected to such contracts will become aroused, and it will furnish splendid argument for those who insist on government and municipally owned utilities."<sup>18</sup>

Perhaps the best example of this type of abuse may be found in the Slaymaker case.<sup>19</sup> This remarkable case was a stockholders' suit stated by the court to have been an action "for accounting and for loss by mismanagement against the

<sup>18</sup> Public Service Commission of Indiana, Case No. 8278, decided March 6, 1926.

<sup>19</sup> *Augusta M. Slaymaker, Plaintiff v. The Columbus Railway Power and Light Company, et al., Defendants*, No. 990 in the Court of Appeals, Franklin County, Ohio, on Appeal, Decision rendered March 21, 1923, not reported.

managing agents and officials of The Columbus Railway Power and Light Company." The defendants were the banking house of E. W. Clark and Company of Philadelphia, the members of the firm and its subsidiary company, the E. W. Clark and Company Management Corporation. These defendants were stated by the court to have acquired the most complete domination of the operating utility company through management contracts which "were as broad as the franchise of the corporation and involved a subordination of the chief administrative officers and directors of said railway company. The relationship of the defendants to the corporation was therefore fiduciary." Whether or to what extent this domination was made possible or supported by ownership of voting stock control is not stated in the decision.

In this case the defendants were charged on various accounts with a total of \$799,017. 48, which when finally paid amounted with interest to \$1,208,465.71.

Included in the above amounts was a charge of \$224,716.05 on account of excess of fees charged under the management contract over the reasonable value of the services actually performed, as found by the court. With reference to this item the court stated as follows:

"THE MANAGEMENT CONTRACT"

"E. W. Clark and Company on April 16, 1912, proposed to assume through a subsidiary corporation the management of The Columbus Railway and Light Company, including the re-arrangement and financing thereof. They proposed a charge of one and one-half per cent. of the gross receipts as compensation. The Clark Company was to select a president of the Railway Company whose salary together with certain other salaries and expenses were to be paid by the Clarks. This proposition was accepted by the Board of Directors of the Railway and Light Company. Later a second proposition similar in tenor was

made to and accepted by the Board of Directors of The Columbus Railway Power and Light Company. These management contracts were unique. As said by the Master they were a 'radical step.' While the writings were somewhat crude they clearly evidenced an intention to give the E. W. Clark and Company an ascendancy over the railway corporations. The Clark domination was reinforced and was made secure by their chosen chief executive of the Railway Corporations and their possession of the assets and control of the intricate and interwoven finances and securities of the railway companies. The railway corporations surrendered their most important corporate powers and functioned only in the most feeble manner by formal action in cases where confirmation by the Board of Directors was necessary.

"The situation is thus described by the Master in his report:

'Under these agreements, E. W. Clark and Company had full charge and control of the executive operations of the companies as well as of their financial management. During the period covered by them, the Board of Directors met regularly, and sometimes at the call of the President. They uniformly ratified and carried out, so far as their action was necessary, the plans and recommendations of E. W. Clark and Company.

'As the results of these "management contracts," we find that for almost seven years, from April, 1912 to January, 1919 the properties of the street railway companies, both from an executive as well as financial standpoint, were operated by a banking house in the City of Philadelphia. We find further that E. W. Clark and Company were paid the sum of \$345,166.05 for this service. We find that during the same period they were paid the sum of \$165,187.29 as construction fees for services rendered by their engineering department. In the same years they realized a profit of \$109,033.12 in handling notes and securities of the company.'

"The Master also found that the management contracts were unconscionable and *ultra vires*.

"The finding of the Master that the management contracts were invalid as to the corporations was approved by the Court of Common Pleas and is sustained here.

"The Clarks received under the management contracts \$345,-166.05.

"The invalidity of these contracts as against the railway corporations would charge back that amount in the hands of E. W. Clark and Company for accounting.

"The E. W. Clark and Company during their trusteeship paid the President of the Railway Company for his services as President. These services as found by the Master were of the value of \$10,000.00 per year. Clarence M. Clark prior to the management contracts had been allowed a salary of \$8,000.00 per year for his services as vice president and fiscal agent. Clarence M. Clark rendered practically the same services under the management contract and the Master found that his services under the management contract were reasonably worth the sum of \$8,000.00 per year. Both these items were allowed as credits by the Master and the Court of Common Pleas.

"It is urged that the E. W. Clark and Company are not entitled even to the reasonable value of the services of the president and of Clarence M. Clark as vice president and fiscal agent. A court of equity, however, proceeds along the channels of equity. It is a familiar maxim that he who seeks equity must do equity. Consequently in the adjustment of the equities here we find no difficulty in reaching the conclusion that E. W. Clark and Company are entitled to a credit for the amount of the reasonable salary of the president and of Clarence M. Clark as vice president and fiscal agent as allowed by the Master and the Court of Common Pleas. Evidence has been offered in this court tending to prove that a charge of one and one-half per cent of the gross receipts is reasonable under the circumstances. This evidence, however, in connection with all the other evidence, is not sufficient to convince us that the finding of the Master that the management contract was unconscionable should be overthrown. Independent of that, however, the management contract is *ultra vires* and the measure of compensation should neces-



sarily be the reasonable value of the services actually performed by the E. W. Clark and Company and their chosen officers and agents."

On this basis the court charged the defendants with \$345,-166.05 collected under this contract between April, 1912, and January, 1919, and credited them with \$120,450 found as the reasonable value of the services actually performed, resulting in the net charge of \$224,716.05 stated above.

#### 6. *Effect on Investors*

The complications of the pyramided financial structure, the contracts between affiliated corporations in which the controlling interests and outside investors may have different interests and the secrecy with which the details of these transactions have been surrounded have combined to create a situation in which the outside investor is largely deprived of the customary protection of his interests. This justifies the criticism by the committee of the Investment Bankers Association of America to which reference has already been made. The extreme instability of the earning power of the securities of holding companies at the top of the pyramided structures has been strikingly presented by Professor William Z. Ripley.<sup>20</sup> An extremely small variation in operating income of the operating companies may be necessary to wipe out the margin of earnings of the top holding company available for interest and dividends on its securities in highly pyramided cases, notwithstanding the wide margin indicated by the net earnings in consolidated statements published in circulars accompanying the sale of the securities.

L. R. Nash<sup>21</sup> also calls attention to this situation clearly, as follows:

<sup>20</sup> *Main Street and Wall Street*, pp. 318, 320.

<sup>21</sup> *Economics of Public Utilities*, p. 299.

"This may be illustrated by an operating company having an investment of \$1,000,000, consisting of \$700,000 of bonds held by the public and \$300,000 of stock owned by a holding company, gross earnings of \$250,000, and net earnings of \$100,000. The holding company, in turn, issues \$200,000 of bonds and \$100,000 of stock, all in the hands of the public. The operating company, after providing for interest charges and reserves, has a balance of \$33,000, constituting the income of the holding company. The bonds of the holding company require \$12,000, this interest being earned  $2\frac{3}{4}$  times, which might superficially be considered a safe margin, but, as a matter of fact, the \$21,000 balance of the holding company after interest is only 8.4 per cent. of the gross earnings of the operating company, which is the sole source of revenue.

"Business reverses or price fluctuations might easily decrease the earnings or increase the expenses of the operating company by this amount, leaving the holding company bondholders without protection and the stockholders with neither income nor value to their equity. Although the stockholders' equity in the holding company appears to be one-third, as a matter of fact it must be considered in connection with the equity of the operating company, which is three-tenths; so the real equity of the holding company stockholder is only three-tenths of one-third, or one-tenth. It follows from the above that the investor in holding company securities must give special attention to the property on which they are issued and the final source of earnings from which the return is paid."

Apart from this fact, inherent in the pyramided holding company type of financial structure, it should also be noted that the security advertisements published in connection with the sale of holding company securities are sometimes grossly misleading with respect to treatment of depreciation. The more conservative companies are generally careful to state earnings after depreciation, or both before and after depreciation. It is not at all unusual, however, for

holding company debentures, collateral trust bonds or preferred stocks to be sold on a showing of consolidated net income (before depreciation and federal taxes) of from two to two and one-half times interest or dividend requirements. In some cases of this sort the properties of the operating companies are subjected to mortgages definitely requiring them to expend for replacements or to pay over to the trustee in addition to ordinary maintenance a stipulated annual amount to provide for depreciation. In these circumstances, such provision is obligatory before any portion of the earnings of the underlying companies can be made available in any way to meet the requirement of the charges on the securities of the holding company. The statement of the ratio of consolidated net income before depreciation and federal taxes to the interest or dividend requirements on the holding company securities amounts therefore in such cases to practical misrepresentation of essential facts.

#### *7. Effect on Commission Regulation*

The effect of the relations between holding companies and operating utility companies upon commission regulation is obvious. In theory rates are regulated by the commission to yield a gross revenue equal to operating expenses and depreciation plus a fair return on the fair value of the property. If such regulation is effective the public can be assured, on the one hand, as to the reasonableness of the division of the benefits arising from the advantages of the holding company; and, on the other, of being protected against the abuses which may follow from its disadvantages. But in so far as holding company profits on management fees and other intercompany transactions enter into operating expenses; and in so far as holding company profits on engineering, construction and financing fees and

other intercompany transactions enter into fixed capital accounts and affect judgment as to fair value; so far, effective regulation is impossible without passing upon the reasonableness of these profits. Nor is this possible without complete information as to the contracts under which such profits are made, the detailed character of the services rendered and the costs assumed and profits earned by the service agency in connection therewith.

Notwithstanding this obvious relationship, operating companies are free in most, if not all, of the states to enter into contracts with affiliated companies for such services without approval or supervision by the state commissions. Knowledge of the existence of such contracts may generally be obtained by the public service commissions in case they initiate an investigation for the purpose or if the reasonableness of charges to operating expenses and capital accounts is questioned in a rate procedure. As is made clear elsewhere, however, none of the commissions have been financed and staffed sufficiently to permit them to initiate extensive investigations of this character in addition to handling the volume of work imposed upon them by current complaints and applications. Even where the attempt has been made by a regulatory commission so to inform itself in a particular case, the commission has practically always been prevented from going to the bottom of the question by lack of access to the cost records of the holding company and its subsidiary service organizations. And yet these cost records, as has been pointed out, are the only possible source of information as to the cost absorbed and therefore the service actually furnished by the controlling company.

In the cases of the City Water Company of Marinette and the City Water Works Company of Merrill, the Wisconsin Railroad Commission disapproved a charge to fixed



capital account of 15 per cent for engineering and construction services of the American Construction and Securities Company. The commission subsequently issued a supplemental order in which new contracts were approved for engineering and construction services. Under these contracts charges were to be based upon "dividing the cost of these services performed by the construction company by the actual cost of construction work performed for all subsidiary water companies operated and controlled by the American Water Works and Electric Company, Incorporated for the preceding year, except that in no case shall the charge for overhead exceed 15 per cent of the actual cost of construction work performed under these contracts. Under the new contracts this percentage for 1927 was ten; according to the testimony given at the hearing of May 3, 1928 the charge for 1928 is to be nine per cent. . . . Furthermore, there was direct testimony submitted that the American Construction and Securities Company was not conceived and organized as a profitmaking venture but merely as a convenient instrument for simplifying the accounting problems of the American Water Works and Electric Company, and that the present contracts contemplate the operation of the construction company at cost and without profit." <sup>22</sup>

The inability of the commission to exercise its independent judgment upon the interpretation of "cost without profit," without access to the accounts of the American Construction and Securities Company in the headquarters of the holding company in New York, is apparent. It is interesting also to note that the charge made prior to the intervention of the commission was 15 per cent, or 5 to 6 per cent of the construction cost (that is, 50 to 66  $\frac{2}{3}$  per

<sup>22</sup> Wisconsin Railroad Commission, Cases No. U-3540 and U-3541. Supplemental decision and order dated June 19, 1928.

cent of the fee) more than the charges made under the new contracts which are said to be based on cost.

The Federal Power Commission also has repeatedly called attention in its annual reports, in support of its plea for an increased engineering and accounting staff, to the impossibility of its fulfilling its duties under the Federal Power Act without access to the cost records of the holding companies and a sufficient force to make adequate examinations of these records. In its annual report for 1927, the commission said:

"Such audits as the commission with its limited force has been able to make have disclosed in several instances what appears to be overcharging of investment accounts, and questionable items in charges, made by some holding companies to their subsidiaries under license. The commission cannot with its present personnel make the investigations and conduct the hearings necessarily preliminary to the issuance of appropriate orders in these cases, and, in consequence, millions of dollars may be improperly entered into fixed capital accounts of licenses."

The necessity of extending the jurisdiction by regulatory commissions over holding companies as well as operating utility companies has not passed without recognition by the commissions themselves. At the annual meeting of the Association of Railway and Utility Commissioners at New Orleans in November, 1928, Commissioner John F. Shaughnessy, chairman of the association's Committee on Capitalization and Intercorporate Relations, advocated uniform regulatory legislation to bring holding companies under the jurisdiction of the state commissions with respect to their security issues and the transactions with their controlled utility companies.<sup>23</sup>

The Public Service Commission of the State of New

<sup>23</sup> *Electrical World*, December 8, 1928.

York in its annual report for 1926 also made the following recommendations:

"(1) That the Public Service Commission Law be amended so as to permit inquiry into the costs and profit accruing to non-utilities from that branch of their business having to do with the furnishing of products or service to operating utilities for ultimate distribution to the consuming public.

"In other words, to impress upon that branch of the business of the supplying companies the legal obligations which the facts and the business practices warrant, so as to prevent the avoidance of the responsibilities and duties rightfully accruing because of the public utility character of that business.

"(2) That the statute be amended so as to define as holding companies those corporations which control operating utilities in this State, not only by ownership of the majority of stocks, but also lease, or operating contract with the right of appointing managers and employees, and by control through voting trustees.

"(3) That the Public Service Commission Law be amended to require holding companies, controlling operating utilities, to make and file annual and periodical reports on forms to be prescribed by the Commission including full detail as to property, products or service, exchanged between controlled companies, and the revenues and expenses relating thereto.

"(4) Giving jurisdiction and authority to the Public Service Commission to investigate the relationship between holding companies and operating utilities, to the end that all of the activities of the holding companies controlling operating companies in this State, including all contracts, agreements, etc., may be made a matter of public record."<sup>24</sup>

Legislation to carry out a portion of these recommendations was introduced into the 1927 session of the New York legislature but was not passed.

It is evident that present methods of commission regulation are totally ineffective in dealing with the special prob-

<sup>24</sup>Public Service Commission of New York, Sixth Annual Report for year 1926, pages 13, 14.

lems of the holding company and that the entire system of commission regulation of utility companies may be circumvented and destroyed unless means are found to render it more effective in this direction.

### 8. *Effect on Public Relations*

The problems arising out of holding company domination of the electric utility industry as herein discussed have combined to create a vast amount of suspicion on the part of the public. They have unfavorably affected public confidence and public relations, which the industry rightly recognizes as the essential foundation for its success. The evidences of this suspicion and loss of confidence have been too numerous and too striking to require detailed enumeration. The dissatisfaction with the operation of public service commissions in many states, the rising tide of legislative proposals to abolish or restrict the state commissions, the political attacks upon the so-called "Power Trust," the agitation leading to the adoption of the Walsh Resolution and the Federal Trade Commission investigation, Congressional interference with the operation of the Federal Power Commission by withdrawal of projects from its jurisdiction and the increasing frequency with which government and municipal ownership are proposed as an alternative have all drawn a large part of their strength from, and demonstrated the existence of this suspicion and lack of confidence.

### D. A GLANCE AT THE FUTURE

The difficult problems that have arisen out of the relation of the holding companies and the electrical utility industry have attracted many suggestions for their solution, some of which are discussed in this volume. The ideal solution would be the development of a new leadership in the industry itself which would reverse the policy of secrecy as to



intercompany relations and transactions and restore the industry to its proper place in public confidence and support.

One of the hopeful features of the present situation is the fact that concentration of control in a few large companies has already advanced so far that the effectiveness of such leadership can hardly be doubted if it should develop.

Unfortunately there is no indication at the present time of any development in the electric light and power industry along the lines indicated. The official attitude of the industry as expressed by its leaders has been to doubt the existence of abuses, except in rare isolated instances, and to insist that in such instances the company or individual involved shall alone be held responsible and to contend that there is no general condition requiring any change whatever in the present situation. Mr. H. T. Sands, president of the National Electric Light Association said at the convention of the association at Atlantic City on June 5, 1928:

"Each association, each company, each individual must take responsibility for its or his own acts, receiving the credit or the blame that the record brings. Every tub must stand on its own bottom. Blame, if cause be found for any, should be placed where it belongs. The entire industry should not be condemned because of the misdeeds of a few, if any."

If such leadership does not develop within the industry it can only be anticipated that the present attacks on the industry will be continued, and that additional restrictions will be imposed by legislation tending toward the development of some one of the other methods of control referred to elsewhere in this volume. In such case it may be anticipated that whatever method of improved control may be attempted, an assured feature of the legislation will be the requirement of complete publicity as to intercorporate relations and transactions in the public utility industry,

including publication of separate income statements for all affiliated companies, whether engaged directly in public utility service or not, and the filing in suitable state or national quarters as public records of complete information as to all intercompany contracts and transactions.

## CHAPTER IV

### CONTROL OF INTERSTATE TRANSMISSION

ONE of the increasingly important difficulties in the regulatory system at present is that the interstate transmission of electric power in wholesale quantities is uncontrolled and uncontrollable by the state public service commissions.

The companies transmitting power at wholesale across state lines at present are usually holding companies beyond any control by state or federal government. They are often connected with the companies generating the power on one side of the state boundary and the company distributing it on the other. The legal fiction that different names make different companies keeps them out of the zone of regulation in such cases.

This is not at the moment one of the most pressing problems confronting the future of public control of power in this country. Yet it is growing in importance so rapidly and affects some states so much already that no plan for adequate control can leave it out of consideration. In most of the developments of major importance being discussed at this time—such as the ones at Muscle Shoals, Boulder Dam, the St. Lawrence and Columbia rivers—it presents a problem of its own. As yet there is no federal agency which has authority to see to it, for example, that rates from a possible government operated plant at Muscle Shoals will be based on actual cost after the power from that plant crosses from Alabama into any other state.

Interstate transmission of electrical energy occurs under two sets of circumstances. It may consist of the transmission and sale of energy produced in one state and furnished directly to consumers in another state or it may consist of the transmission and sale in wholesale quantities to a dis-

tributing company in a second state. The first set of conditions is illustrated by *Pennsylvania Gas Company vs. Public Service Commission of New York* (252 U. S. 23) where the court held that the state commission had power to determine rates because they were local in character.

In so far as the wholesaling is concerned the Supreme Court has determined that unless Congress has acted there is no authority to regulate. The specific case was decided in January, 1927, when the court ruled that the Rhode Island commission did not have the right to order the Narragansett Electric Lighting Company to increase the rates it was charging to a company across the border in Attleboro, Massachusetts. The latter took less than 3 per cent of the production of the Narragansett company. This decision was made in spite of the fact that continuance of service to the Attleboro company would prevent the Narragansett company from performing its full duty toward its other customers. This decision clearly leaves the wholesaling of electricity across state lines unregulated except with regard to the licensees of the Federal Power Commission.

The need of such regulation is not by any means hypothetical, as will appear from the following illustration. In 1922 North Carolina suffered from a drought which decreased the supply of electricity so materially that street cars could not run and homes were in darkness. In Georgia there was no power to spare. The same was true of Alabama, but at Muscle Shoals power was available by using the steam plant of the national government. The Alabama Power Company relayed its power to Georgia. Georgia relayed its power to North Carolina, while Alabama was supplied by the Muscle Shoals steam plant. A catastrophe was averted. This shows the possibility of a complete hook-up



so that the available resources of one area may be used in another.<sup>1</sup>

A somewhat similar situation existed in the northeastern states five years ago when an investigation was made by a special conference called for the purpose of outlining a program for better state and federal cooperation.<sup>2</sup> The area under consideration covered the states of Maine, New Hampshire, Vermont, Massachusetts, Connecticut, Rhode Island, New York, Pennsylvania, New Jersey, Delaware and Maryland and the District of Columbia. This area, which has 40 per cent of the country's population, consumed 50 per cent of the kilowatt hours in 1923 and produced and operated 70 per cent of the primary power of the country.

It was reported that in the eleven states nearly two hundred utility companies were engaged in power production and distribution with many of them under common ownership. Of these 45 per cent were actually interconnected but only 8 per cent of the interconnections had a capacity sufficient for effective interchange of power. Thus it appeared five years ago that in this area the principle of interconnection applied to nearly half the area. It may be reasonably assumed that in the last five years such interconnections have steadily increased. The committee of the conference expressed the opinion that early and effective interconnection of the utility systems would result in great economies in cost of production. The economies effected would comprise:

(a) Reduction of the amount of reserve equipment

(b) Better average load factor through pooling of daily

<sup>1</sup>It is reported that interconnecting systems make it now possible to relay power from the Atlantic seaboard to the Mississippi River.

<sup>2</sup>The Secretary of Commerce and the chairmen of eleven public utility commissions and representatives of the federal government participated in the conference.

- and seasonal load variation and wide diversification of use through increased industrial consumption
- (c) More security in power supply against interruption by strikes, storms, failure of transportation and equipment
  - (d) Available water power could be much more advantageously used
  - (e) Interconnection would make use of secondary water power
  - (f) Power would be available to meet growing demands.

Interconnections of this character will become the more imperative when those great reservoirs of power, Muscle Shoals, Boulder Dam, Columbia and St. Lawrence rivers, have once begun to produce electrical energy. The best and most economical utilization of this output will undoubtedly entail interstate transmission.

In 1926 the Bureau of Business Research of Harvard University made a detailed study of the amount of power exported and imported from state to state. Their table of power generated, exported and imported is included as a part of this study.<sup>3</sup> A second table (Table No. 2) has been prepared which gives the percentages of the amount of power exported and imported in relation to the total generated. Interstate transmission constitutes 9.06 of the total generated but when we examine the frequency distribution of the forty-nine jurisdictions it is clear that

1. About half (25) of the states *export* between .001 and 10 per cent of the electrical power generated within their borders. In addition six states export no energy whatever. Thus thirty-one states, or 63.2 per cent, export less than 10 per cent of power generated.
2. The remaining states, however, export large portions

<sup>3</sup> See Table No. 1 on page 132.

of their power. Of the eighteen, twelve export between 10 and 20 per cent of the power generated within their borders, five between 20 and 50 per cent, one (Idaho) exports 63 per cent and one (Vermont) 92 per cent. Thus while the majority of states export less than 10 per cent of the power generated, several states of importance from the point of view of the electrical industry, *i.e.*, Alabama, Idaho and Vermont, export a large and even a major portion of the power generated. The percentage 9.06 does not truly represent the national situation. It becomes necessary to examine the individual percentages in order truly to appreciate the importance of interstate transmission.

3. Twenty-five states *import* between .001 and 10 per cent of the electrical power generated within their borders. Four import no power whatsoever.
4. The remaining states import large portions of their power. Eight import from 10 to 20 per cent, four from 20 to 30 per cent, while Maryland imports 74.7 per cent, Mississippi 98.1 per cent and three states import over 100 per cent of the power they themselves generated, Missouri, Utah and Nevada. This means that over half of that used within their borders is imported power.
5. In 1926 there were in operation 453 interstate power lines. Of these 152, or 33.6 per cent, were placed in operation during 1924, 1925 and 1926. This percentage indicates the rapid growth of interstate transmission.

## ELECTRICAL UTILITIES

TABLE NO. I

EXPORTS AND IMPORTS OF INTERSTATE POWER BY ELECTRIC LIGHT AND  
POWER COMPANIES, UNITED STATES, 1926

Percentage of Total Generation

State	Power Generated (Kw-hr.)	Interstate Power		Interstate Power in Percentages	
		Exported (Kw-hr.)	Imported (Kw-hr.)	Exported (Kw-hr.)	Imported (Kw-hr.)
Maine.....	503,105,000	2,803,706	823,946	.00557	.00163
New Hampshire...	259,133,000	15,514,336	47,320,485	.0598	.182
Vermont.....	254,508,000	234,544,352	21,207,590	.921	.0833
Massachusetts.....	2,097,538,000	226,737,240	420,760,736	.108	.200
Rhode Island.....	405,299,000	79,465,342	154,920,753	.196	.382
Connecticut.....	906,941,000	52,106,110	51,219,136	.0574	.0564
New York.....	9,146,059,000	147,214,876	17,112,855	.0160	.00187
New Jersey.....	1,722,749,000	19,780,642	202,783,965	.0114	.117
Pennsylvania.....	7,220,386,000	614,801,002	477,281,883	.0851	.0661
Ohio.....	4,596,945,000	285,558,782	487,588,090	.0621	.106
Indiana.....	1,420,528,000	152,210,606	146,616,303	.107	.103
Illinois.....	5,892,130,000	646,354,014	305,976,537	.109	.0519
Michigan.....	3,184,591,000	57,715,760	42,943,150	.0181	.0134
Wisconsin.....	1,779,973,000	225,598,472	126,545,506	.126	.0710
Minnesota.....	843,258,000	50,842,474	195,984,387	.0602	.232
Iowa.....	1,308,622,000	632,315,767	76,680,703	.483	.0585
Missouri.....	760,910,000	59,690,208	885,509,239	.0784	1.16
North Dakota.....	45,393,000	0	6,194,161	.0	.136
South Dakota.....	80,342,000	7,786,857	3,187,987	.0969	.0396
Nebraska.....	358,494,000	19,591,133	1,490,491	.0546	.00415
Kansas.....	761,429,000	129,960,481	32,631,815	.170	.0428
Delaware.....	118,866,000	21,019,362	10,238,314	.176	.0861
Maryland.....	586,917,000	78,365,841	438,524,065	.133	.747
District of Columbia	350,014,000	42,182,891	0	.120	.0
Virginia.....	920,255,000	10,692,478	109,770,362	.0116	.119
West Virginia.....	1,682,968,000	736,930,012	95,349,606	.437	.0566
North Carolina....	1,116,043,000	25,029,500	329,140,958	.0224	.294
South Carolina....	1,023,076,000	318,670,000	67,861,902	.311	.0663
Georgia.....	709,705,000	68,094,902	272,418,703	.0959	.383
Florida.....	494,745,000	0	1,314,718	.0	.00265
Kentucky.....	457,770,000	73,701,994	182,259,635	.161	.398
Tennessee.....	893,683,000	21,797,033	11,469,426	.0243	.0128
Alabama.....	1,138,804,000	283,984,216	8,196,946	.249	.00719
Mississippi.....	58,667,000	279,300	57,577,615	.00476	.981
Arkansas.....	163,517,000	873,775	61,481,112	.0053	.375
Louisiana.....	514,552,000	82,720,682	15,421,073	.160	.0299
Oklahoma.....	429,735,000	11,469,200	85,921,944	.0266	.199
Texas.....	1,430,356,000	17,470,344	1,356,058	.0122	.000948



EXPORTS AND IMPORTS OF INTERSTATE POWER BY ELECTRIC LIGHT AND  
POWER COMPANIES, UNITED STATES, 1926Percentage of Total Generation (*continued*)

State	Power Generated (Kw-hr.)	Interstate Power		Interstate Power in Percentages	
		Exported (Kw-hr.)	Imported (Kw-hr.)	Exported (Kw-hr.)	Imported (Kw-hr.)
Montana.....	1,407,783,000	18,432,000	0	.0130	.0
Idaho.....	738,876,000	465,743,608	78,554,534	.630	.106
Wyoming.....	42,084,000	0	0	.0	.0
Colorado.....	517,405,000	0	0	.0	.0
New Mexico.....	25,993,000	1,214,848	2,006,383	.0467	.0771
Arizona.....	167,164,000	21,181	4,664,592	.000126	.0279
Utah.....	347,857,000	0	421,274,000	.0	1.21
Nevada.....	36,553,000	0	46,019,035	.0	1.25
Washington.....	1,716,557,000	73,913,249	97,346,669	.0430	.0567
Oregon.....	806,296,000	91,167,309	68,562,228	.113	.0850
California.....	6,700,633,000	67,164,952	21,181	.0100	.00000316
	68,145,217,000	6,171,530,837	6,171,530,837	.0906	.0906

TABLE NO. II

## FREQUENCY DISTRIBUTION BY PERCENTAGE OF POWER GENERATED\*

Percentage Exported	Number of States	Percentage Imported	Number of States
No exportation	6	No importation	4
.001- 9.9	25	.001- 9.9	25
10.00 -19.9	12	10.0 -19.9	8
20.00 -29.9	1—(Alabama—24.9%)	20.0 -29.9	4
30.00 -39.9	1—(South Carolina—31%)	30.0 -39.9	3
40.0 -49.9	2—(West Virginia—43.7%) (Iowa—48.3%)	40.0 -49.9	0
50.0 -59.9	0	50.0 -59.9	0
60.0 -69.9	1—(Idaho—63%)	60.0 -69.9	0
70.0 -79.9	0	70.0 -79.9	1
80.0 -89.9	0	80.0 -89.9	0
90.0 -99.9	1—(Vermont—92%)	90.0 -99.9	1
	—		
Total.....	49	100.0 and over	3
		Total.....	49

\* This includes 48 states and the District of Columbia.

## FUNCTIONS OF EXISTING FEDERAL AGENCIES

The following agencies exercise functions that might be expanded to fill the gap in regulation that has just been described: the Interstate Commerce Commission and the Federal Power Commission.

The first of these agencies, the Interstate Commerce Commission, was organized in 1887 for the purpose of exercising supervision of railroads, pipe lines, telegraph companies, telephone companies, etc. As this commission was not granted power to control the transportation of electricity, this commodity does not come under its purview. Furthermore, the Interstate Commerce Commission does not seek this additional burden because its docket is now filled by its present responsibilities. It may therefore be ruled out of consideration on this ground as well as on the ground that the transportation of electricity is rather a sectional or regional problem than a national one.<sup>4</sup>

The other possible agency in the national government for controlling interstate transmission of power is the Federal Power Commission, created by act of Congress and approved by the President on June 10, 1920. This act ended a period of discussion and controversy which for more than a decade had been waged both in and out of Congress concerning a national policy with respect to water power already under federal control. The earlier legislation had proved to be a failure as the rights granted were so insecure and the liabilities imposed so uncertain that any water power developments under federal authority could

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<sup>4</sup>The Federal Trade Commission, organized in 1913 to act as the administrative agency for the enforcement of anti-trust legislation, has authority to prevent unfair competition. It may investigate the power industry only when it seems that the anti-trust laws are being evaded. During the spring of 1928 the Commission was authorized by Congress to make such investigation. This disclosed many important tendencies and abuses but in no way solved the problem of administration.

be financed only with difficulty. Previous to this date the authority over federal water power resources was granted to the Department of War in connection with the navigable waters, to the Department of the Interior in connection with the public domain with the exception of the forest lands and to the Department of Agriculture in connection with the forest lands.

The result of this situation was haphazard development of the water power resources which was checked on several occasions by vetoes of Presidents Roosevelt and Taft. Two conspicuous vetoes in 1908 and 1909 mark the beginning of a definite coordinated movement for a Federal Power Commission to safeguard the federal water resources. Unusual pressure was brought to bear on Congress about this time by various groups possibly best represented by the National Conservation Association. Many bills were presented to Congress as a means of solving the problem but a plan submitted by an engineer, O. C. Merrill, of the Forestry Service, was accepted by Congress, by the President and by the three departments concerned. This bill became a law June 10, 1920. The act provided for the coordination under a special commission of all activities formerly exercised by the three departments. The commission is composed of the secretaries of War, Interior and Agriculture with an executive secretary in charge of the work of the commission.

In place of the uncertain tenure and requirements of previous legislation an applicant for a power project under the Federal Water Power Act may secure a license for a term not exceeding fifty years. The license is a contract between the government and the company seeking the site in question. It expressly contains all the conditions which the licensee must fulfill and except for breach of the con-

ditions cannot be altered during its term either by the Executive or by Congress without the consent of the licensee. If a licensee fails to commence construction under his license it can be canceled by executive action but after construction has once started only by judicial action, and then only if no other appropriate legal remedy is available.

When the license period expires the United States Government may take over the properties of the licensee for its own use, permit them to be taken by another or issue a new license to the old licensee. If the properties are taken away the licensee must be paid his "net investment" in the properties. This is interpreted as equal to the actual investment plus severance damages but less such sums in depreciation and amortization reserves as have been accumulated during the period of the license in excess of a fair return on the investment. If the license is renewed it must be "upon reasonable terms." While "unearned increment" and intangibles are not to be recognized, the basis of payment protects every dollar of actual, honest investment in the properties.

The licensee is required so to plan his project that it will conform to a scheme of development providing for the fullest reasonable utilization of the resources of the stream. He must maintain his plant in good operating condition, make the necessary replacements of worn-out or obsolete equipment and maintain a system of accounting in such form as may be prescribed. He must also pay reasonable annual charges for reimbursing the United States for a proper share of the cost of administration of the act and for recompensing it for the use of its land or other property.

In addition to the issuance and administration of licenses the commission created by the act is authorized to make investigations of a wide scope. It is given jurisdiction over the regulation of rates, services and securities, over intra-



state business wherever the several states have not provided agencies for regulating such themselves and in interstate transactions whenever the individual states have not the power to act or cannot agree. The commission is required to pass upon applications for entry to lands in power-site reserves, to find whether the construction of proposed power projects on the non-navigable tributaries of navigable streams will affect interstate or foreign commerce, to investigate the value of power available at government dams and the advisability of the development of such power by the United States for its public purposes; further, to determine whenever any licensee makes use of a headwater improvement of another licensee or of the United States, to assess the proper share of the annual cost of such improvement which should be paid by the licensee benefited and to fix the fair value of any project already constructed which is brought under the provisions of the act.

The Federal Power Commission is limited in its jurisdiction to the consideration of projects designed to produce water power. Structures having any other purpose unless incidental to works constructed for power purposes are not within the competency of the commission. Projects constructed under any permit granted before 1920 are exempt from its power and in each case a project must comply with state laws governing beds and banks and the use of water for power purposes.

The most important difficulty of the work of the Federal Power Commission is its relation to the various state authorities. In certain respects the authority of the Federal Power Commission is exclusive, as in the disposition of public lands for power purposes and the determination of the type of structures which may be built in a navigable stream.

In other connections the commission has concurrent power with the state commissions after the license has been granted. If the state commission has a plan of accounting and provides that the utility agencies create satisfactory depreciation reserves the Federal Commission steps aside. On the other hand, if the state law does not cover the point or if it falls below the standard set by the commission the federal law is supposed to be applied. In other words, the commission's authority covers initial action in all matters not provided for by state statute as well as supplementary requirements when necessary. In the same way the Federal Power Commission has control over rates of its own licensees but as yet this power has not been exercised.

A good illustration of this relationship is found in the Conowingo project on the Susquehanna River. In this case the dam and power house are in Maryland. The construction of the dam floods land in both Maryland and Pennsylvania. The power is produced in Maryland and sold to a Pennsylvania company to be used for lighting in Philadelphia. Three corporations were created, two as owners of the property in the two states and the third as a distributing company. The plan was to be financed by the Pennsylvania corporation which would hold all the voting stock and so control all three corporations. As Pennsylvania has no control over the issuance of securities by public utilities it became necessary for the Federal Power Commission to step in and to materially alter the plan proposed.

Discussion of details is unnecessary for our purposes but it is an example of the regulatory features of the act and illustrates how state agencies and the federal commission can supplement each other.

States have been suspicious of the terms of the Federal Water Power Act. In 1922, for example, New York State

filed a bill with the Supreme Court of the United States asking that the Federal Power Commission be enjoined from enforcing certain provisions of the federal act in regard to the use of the waters of the Lower Niagara River. The matter, however, was never argued in court. After some delay Mr. Charles Evans Hughes was appointed special counsel to the State Water Power Commission and took up the matter of jurisdiction with the Federal Power Commission. He claimed that the Maid of the Mist pool was not navigable, that all the proposed power development was inside of New York State and that consequently the state had complete control of plans, revenues, license conditions and recapture.

The answer of the Federal Power Commission <sup>5</sup> is important in view of the attitude illustrated. It held that in this particular case there was no question that the particular river was navigable and as such under federal control. An old act of Congress assuming control over all diversion of water from the Niagara River was cited. The fact of an international treaty with Great Britain making all diversion dependent upon the action of the International Joint Commission was further cited as evidence of the interest of the federal government in the situation. It was maintained that where power is involved in such a case the Federal Power Commission had some control. There was, however, no attempt to claim exclusive jurisdiction. It was stated that the state and the federal commission had concurrent jurisdiction, that the federal commission would not attempt to collect revenue, that its law sustains the position that the state could recapture, that the federal commission could only approve transfers of property leased after the state had approved. It was further pointed out that

<sup>5</sup> Letter of May 15, 1926.

there would be no conflict over regulation of services, inasmuch as New York has a commission empowered to take care of such matters, and in any case regulation of services is discretionary with the federal commission rather than mandatory. This statement was satisfactory to the New York Power Commission.

The commission has made for itself a definite place by the care with which its members and executive secretary have exercised the power granted by Congress.

The commission has operated throughout its history with a very limited budget, depending upon staff members assigned to it by other agencies. This limitation has been felt particularly in the accounting and engineering sections. Frequently the commission has been unable to check up construction or has been delayed in a careful analysis. The holding company arrangement has in several cases hampered its efforts because the commission experts could not locate records applicable to a particular project.

A second limitation on its work has been lack of authority over interstate transmission. The Supreme Court has denied this power to the states and the Federal Power Commission has never been granted authority by Congress to undertake the task.

The figures cited above abundantly prove that the interstate shipment of electrical power is an accomplished fact. With the rapid tendency to centralize control through the merger process and the impending development of several major projects under the auspices of the federal government the interstate problem will loom larger and larger. There is today no authority adequate to supervise such shipments in the public interest. Without the cooperation of a central federal agency state control is impossible.

Several plans have been suggested by which interstate wholesaling of electric power may be controlled.



*A. Interstate Compacts*

One possibility is the development of regional control through the compacts between interested adjoining states. This is a feasible plan only if the states are really willing to cooperate. Thus far many difficulties have been encountered. On the Colorado the most serious trouble has been to secure the complete cooperation of the states involved in the compact. Jealousies have arisen which have delayed the passage of the Boulder Dam bill through both houses of Congress. When the tristate compact was proposed between New York, New Jersey and Pennsylvania, delegates from New York withdrew because interstate complications did not appear to them to warrant a definite compact. The legal restrictions of various states that specifically prohibit the exportation of power are indicative of this fear. Evidence of this type points to the difficulty of securing the assent of eleven states in the northeastern section to any program of superpower. It would require some regional body to supply the needed administrative control after the compact had been drawn. This solution is nearly ideal but state jealousies are still too dominant to hope that it could be made effective on a large scale.

*B. Grant of Power to the States by the National Government*

The second proposal is that the problem of interstate transmission might be solved by some method which would give to the state commission the right to regulate rates where the transmission is interstate in character. Interstate transmission as already indicated is of two types. The first is illustrated by *Pennsylvania Gas Company vs. Public Service Commission*, second district, State of New York (252 U. S. 23). In this case the court held that the interstate transmission was essentially local and was subject

to state regulation. The company sold direct to the consumer. This might be classified as retailing in interstate commerce.

The second type is illustrated by the Attleboro Case (273 U. S. 83) which involved the wholesaling of electricity. As to the first type of case, there is no argument—the states control, until the federal government chooses to step in or the Supreme Court reverses itself. As to the second type, the question arises regarding the method by which the national government may use the state commissions to solve the problem.

Three possibilities exist.

*a.* First: Congress may pass a law which would invest in the state commissions of the two states involved joint authority to make the administrative rulings necessary to the case. Such a provision would raise the question of constitutionality. Can Congress grant to the state commissions an exclusive federal power? No categorical answer can be made. There are no precedents. In the Wabash Case (1886) the court declined to allow the states to control interstate railroad rates even when Congress had not acted. In naturalization, the state courts act as agents of the Bureau of Naturalization. In prohibition, the Eighteenth Amendment grants concurrent jurisdiction. The draft boards during the war were voluntary and patriotic organizations. The same was true of the food and fuel administrators as well as the State Councils of National Defense.

*b.* A second possibility is found in the report of the executive secretary of the Federal Power Commission for 1928. His proposal is as follows: "While the commission has no definite recommendation to make at this time it has been suggested that this dilemma might be avoided by adopting a procedure similar to that provided in the Federal

Water Power Act—that is, by conferring upon the states plenary jurisdiction to act individually in cases of the Pennsylvania Gas Company class and original jurisdiction to act jointly in cases of the Attleboro class, and by conferring upon some federal agency jurisdiction to review on appeal the findings of state agencies in the latter class of cases. State agencies, more familiar with local conditions than any federal agency is likely to be, could hold hearings, take testimony, assemble evidence and determine the issues. The federal agency having only appellate jurisdiction would render its decisions upon the record presented without the necessity of taking new testimony or admitting new evidence. A procedure of this character would leave the final authority in cases involving more than one State where it properly belongs, in the hands of the federal government; would give to individual states the right to settle their own local problems; would give to two or more States the opportunity of adjusting their own differences; and would avoid the necessity of overloading federal agencies with details or with matters that the states had better decide for themselves.”

The proposals to grant to the state plenary jurisdiction in cases like the Pennsylvania Gas Company is unnecessary. This power is now being exercised as a result of the court decision. The second part of the plan is more formidable and it seems impossible to distinguish between this and the plan proposed under *a*. The essential difference is that the Federal Power Commission would by law become the first board of appeal and thus in a measure relieve the Supreme Court of litigation on utility disputes.

*c*. A third proposal would be to grant to the Federal Power Commission, or other federal agency, original jurisdiction in all cases of the Attleboro class but allow that body to use as agents the state commissions involved in any

given dispute. This would be similar to the method of the Bureau of Naturalization. The plan might avoid some constitutional difficulties.

In all these plans one contingency is forgotten because of the constitutional complications. What will happen when the members of the two or more state commissions involved in an interstate case refuse to serve and refuse to enter into any cooperative arrangements? At that point, these plans break down. The state commissions cannot be forced to act unless the removal power of a governor be invoked. Since nearly half of the commissions are elective even this remedy would not be available. Add to this the relative ineffectiveness of the state commissions and the confusion is even greater.

It would seem that the above proposals are half-hearted endeavors to solve a clear-cut issue. The federal government can hardly avoid its responsibility to the states by such methods.

### *C. Federal Power Commission with Expanded Authority*

A third solution is that the Federal Power Commission should be given control over electric rates, service, financial methods, etc., whenever electricity is transported in interstate commerce.<sup>6</sup> This would extend its present control of rates to all interstate transmission as well as to its own licensees. This extension of authority would, in the first place, require that the commission be recreated. Its present ex-officio organization would have to be replaced by a permanent personnel. In the second place, a definite budget would be required to provide an adequate staff of accountants and engineers so that regulation could become effective. Electric transmission is a sectional rather than a national problem and it would be necessary to devise an administrative set-up to safeguard these sectional as-

<sup>6</sup> This applies only to wholesale transactions as typified in the Attleboro case.



pects. The scheme which could be followed would be the establishment of regional boards whenever they were necessary. At present a northeastern, a southeastern, a southwestern and northwestern regional board are obviously required.

The commission would have control over all power projects on navigable and interstate streams, in the forest reserves or in connection with federal reclamation or irrigation projects. Sites wholly within the boundaries of a state would not come under its jurisdiction. Rates would come under its control only in connection with interstate transmission. The commission would have power to set up uniform accounting systems for these projects under its direction as well as for companies engaged in interstate transmission. The result of this control would have the effect of a material change in the work of the public service commissions. Companies would not have two accounting systems if engaged in both interstate and intrastate commerce. One possible result might be that the commissions would adopt the Federal Power Commission's accounting system. In the same way the state commissions' practice in regard to stock issues and holding companies would be materially altered. The national commission would be given power to control the acquisition of operating companies so that holding companies could not purchase these properties at inflated prices. In the same way service contracts with holding companies and charges for management should be under the jurisdiction of a national body. Finally, the Federal Power Commission could undertake the issuance of statistical and other material in regard to the development of the light and power companies. Expenditures by the holding companies for advertising and propaganda could be controlled. This would prevent certain of the abuses which have come to light in the Federal Trade Commission investigation.

Such a drastic yet necessary alteration of the authority of the Federal Power Commission could not be secured without a struggle. The fear of opposing concentrated private control by concentrated governmental control and the fear that the rights of the states might in some way be limited would form the basis of opposition. The power interests might also vigorously oppose it. The need, however, is great and the advantages to the consumers and the states are obvious.

Two questions can be raised in regard to national control and the Federal Power Commission. What will be the power of the states? Will the state commissions become as impotent in regard to electric light and power companies as they have with the railroads? The two are so unlike that this situation will not occur. The rates for electricity are fixed for industrial and domestic uses and this power will remain in the hands of the state commissions. The national body will fix only interstate wholesale rates. This will have a direct effect on state rates but only in case they are unreasonably high.

A holding company which sells power to a distributing company across a state line will then have the rates on that power fixed by national authority on the basis of a reasonable and prudent investment. At present enjoying a considerable monopoly as holding companies actually do in most cases, it is possible to charge rates which may include a profit far and above a legitimate return on the investment and operation costs. If competition existed no danger would be present but the distributing concern has usually no option other than to buy from the holding company. In many cases it is connected with that holding company and the sale is between partners.

In the same way the Federal Power Commission might

control the financing of the holding companies and thus prevent speculative pyramiding and the other abuses which have come from the organization of holding concerns.

National control of wholesale interstate shipments seems therefore the only feasible solution to that problem. As interstate shipments grow in importance, an inevitable development, and as centralized holding companies extend their control according to present tendencies the urgency of some such treatment of the problem will become increasingly apparent. The most practicable solution seems therefore to involve empowering the Federal Power Commission to set rates for power transmitted across a state line and to supervise the methods of financing and control of holding companies engaged in interstate transactions.

## CHAPTER V

### ATTITUDE OF PUBLIC TOWARD CONTROL

SINCE public control has its origin in legislation and the administrative policies and practices that flow from it, the attitude of the public toward the problems of control is of paramount importance, for public sentiment is generally accepted as the force which determines legislation. It is for that reason incumbent upon those investigating the character of public control to examine the popular attitude toward the existing methods and problems of regulating the electrical industry. The prevailing attitude of people in this country has been fashioned by the concerted and elaborate efforts of utility propagandists. Rarely if ever has the general public been so consistently and thoroughly propagandized as in the recent so-called "educational" campaign of those representing the utility interests, except of course during the World War. As stated by one of the publicity experts, every known device and method has been used except sky-writing.

Fortunately for those investigating this subject official hearings were held and authentic exhibits filed before the Federal Trade Commission which had been instructed by the Senate to make a survey of this subject. The following analysis is based almost exclusively on the disclosures made in this survey.

#### PROPAGANDA OF THE UTILITY ORGANIZATIONS

To appreciate the full significance of the propaganda in regard to the regulation and further development of the electrical utilities in the United States one must go back to the period immediately following the war; *i. e.*, 1918-1925. Here for the first time apparently the public utilities



under private control and the electric light and power companies particularly became generally aware of the importance of favorable public relations. This was due to a number of circumstances.

First and foremost was the reaction against government in business, a necessary war-time development, that had become the more abhorrent to the American economist and business man because of the establishment of the communist régime in Russia.

Secondly there was the apparent menace of the government developing electrical power on a large scale by utilizing such public resources as Muscle Shoals with a power capacity equal to over half the present development in the south; in the west lay Boulder Dam with its potentialities for development that might make a new west; in the extreme corners of the north the Columbia and St. Lawrence rivers remained with their power possibilities as yet untouched. It was believed that if the movement already under way should make further headway it would endanger the \$17,000,000,000 investment of the private utility companies.<sup>1</sup>

A third cogent reason for cultivating public relations was the need of new capital. Emerging from the war the utilities found themselves tremendously handicapped both as to plant and equipment requirements due to the enforced suspension of activities during the war. As a consequence when construction could be resumed the utilities faced an unprecedented demand for new capital both to take up the war lag and to supply added facilities, greater than had ever been needed before. In Illinois alone the public utility companies required \$74,000,000 to \$90,000,000 annually for at least five years to catch up with their plant and equip-

<sup>1</sup>"Your Business, My Business, Our Business"—Illinois Committee on Public Utility Information.

ment requirements.<sup>2</sup> It was estimated that for the five-year period some \$5,000,000,000 would be needed throughout the United States. The suggestion met with favor accordingly that an effective publicity campaign might be launched to raise capital by various means, particularly through the sale of stock to the public.

Finally, there was the impending development of new sources of power, on the one hand, and an increasing demand for power, on the other. Important mergers were under way that looked toward a national system which completely ignored state lines. This raised the problem of regulation. Previously the small utility company had operated principally within the boundaries of a single state. It was therefore under the regulation of the government of the given state. The problem of interstate regulation brought a new issue before the public. Fearing the possibility of federal regulation it was considered worth while to educate the public regarding the dangers of federal control and the possibilities of some substitute that would be more to the liking of the utility corporations.

Certain sponsors of the utility interests concluded that in view of the above circumstances the companies should take their case directly to the people. The war experience had taught directors of these enterprises the value of public opinion as well as the technique of grooming it to suit special interests. A favorable public opinion at this time seemed very valuable to them. A market might be built up for stock and security sales. It might be of great advantage in influencing state and federal legislation on regulation and in avoiding the "menace" of public development of electric power.

The above consideration led naturally to a systematic

<sup>2</sup>"Nine Years of Public Utility Information," printed by the Illinois Committee of Public Utility Information.

and well-organized campaign of "public education" that had three major aims: the sale of securities, regulation favorable to private interests and private rather than public development of water power resources.

#### ORGANIZATION AND FUNCTIONING OF THE PUBLICITY DEPARTMENTS

The departments of public relations and publicity are new developments in the field of modern enterprise. They were conceived by the new generation of business men and are a natural result of a business structure that depends upon the man on the street as well as upon the capitalist for the investments that make their operations possible. This was as true in the case of the utilities as in other business activities and industries.

Starting with a single state committee in 1918,<sup>3</sup> the public relations division of the utilities has now a well-coordinated system of bureaus on a national, state and local scale. In the United States today there are public relations units in almost every company of any size; there are twenty-eight state committees representing forty-eight states; there are three national branches covering particular divisions of the utility industry and a single joint committee in Washington that in a way coordinates all of them. This growth has come about in a period of only ten years.

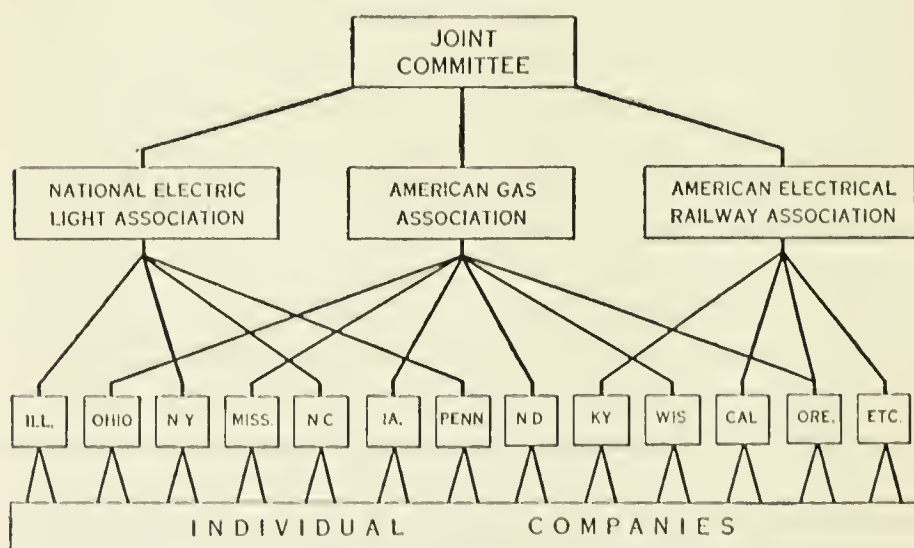
#### NATIONAL AGENCIES

The relationship between the bureaus both national and local is somewhat like the relationship between the tenpins in bowling. The key pin is the Joint Committee on Utilities. It is the coordinating agency of the other organizations. In addition it carries on particular activities of its own. The Joint Committee draws together the activities

<sup>3</sup>The Illinois Committee on Public Utility Information was the first.

of the three national branches: the American Gas Association, the National Electric Light Association and the American Electric Railway Association.

The following illustration shows how they in turn coordinate the efforts of the state bureaus, the function of which is to encourage the cooperation of the public relations departments of single companies as well as to create favorable public opinion in the general public.



THE JOINT COMMITTEE

#### a. Purpose

Although the Joint Committee was described as the key pin of the organization from the standpoint of structure its main purpose was not primarily that of coordinating the activities of the other bureaus but to represent the industries that make it up in connection with pending legislation at the national capitol.<sup>4</sup> The particular type of

<sup>4</sup>This is often referred to as lobbying. See testimony of Josiah Newcombe, counsel before Federal Trade Investigation, Senate Doc. 92, part 3, p. 109. Other business combinations have previously been represented



legislation in which the Joint Committee on Utilities was interested is represented by the Walsh Resolution calling for an investigation of the whole electrical industry, the Muscle Shoals and Boulder Dam proposals, etc. Another illustration is to be found in connection with the Attleboro case which involved the far-reaching question of controlling interstate transmission of power. In opposing it the Joint Committee maintained that the amount transmitted across state boundaries was inconsequential. Finally, the Muscle Shoals and Boulder Dam bills called forth strenuous efforts on the part of the Joint Committee on the ground "that the entry of the government, whether national, state or local, into this field was constitutionally unsafe, politically unwise, and economically unsound and competitively unsafe."<sup>5</sup>

#### b. Method

The committee represented a huge investment of dollars. They conceived that this would be jeopardized if the government entered the power business in any way, shape or manner. They proposed to prevent the passage of such measures by creating public sentiment against them. The vice chairman of the committee states that the "committee did not propose to 'gumshoe' in Washington. We are going to their [Congressmen's] constituents, which is our constitutional right. We are going to depend upon the backfire. . . ." <sup>6</sup>

In order to carry out this program effectively the services of some of the most able men in the industry were enlisted.

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in the same way. See Dr. Kerwin's *Federal Power Legislation* giving an account of the formation of the Water Power Development Association to campaign for suitable laws in the use of streams.

<sup>5</sup>Statement of Mr. George B. Cortelyou, chairman of the committee, Senate Doc. 92, part 3, p. 109.

<sup>6</sup>"Who's Who in the Power Lobby," National Popular Government League Bulletin 115.

Mr. George B. Cortelyou, a former Progressive and one time Secretary of the Treasury under Roosevelt, was chosen to head the committee.<sup>7</sup> Mr. Philip Gadsen, former Philadelphia utility president, was chosen vice chairman, while Mr. Josiah Newcombe, listed by Dr. Kerwin as a lobbyist of long standing, is counsel.<sup>8</sup> Major J. S. S. Richardson, former Philadelphia editor, is chairman of the Department of Publicity. The public relations work is chiefly in his hands.

#### THE NATIONAL ELECTRIC LIGHT ASSOCIATION

The American Gas Association, the National Electric Light Association and the American Electric Railway Association are similar in organization and purpose. A description of the organization and personnel of the National Electric Light Association Publicity Department may serve as a type of the other two, for their purpose and activity vary only inasmuch as they serve different divisions of the utility industry.

##### a. Purpose

Like the Joint Committee, the National Electric Light Association opposed government development of the light and power industry. In the words of the managing director: "We feel it is a responsibility to get every person that can be reached in the country to have our views on the subject of municipal ownership and we have availed ourselves of every means of publicity known to date."<sup>9</sup> They also hoped to create favorable public sentiment on the right sort of governmental regulation and hoped by their cam-

<sup>7</sup> Mr. George B. Cortelyou has been called the window dressing of the committee by Mr. Judson King because he has long been identified in the public mind with Progressive movements.

<sup>8</sup> Dr. Jerome Kerwin, *Federal Power Legislation*.

<sup>9</sup> Statement of Mr. Paul S. Clapp, Senate Doc. 92, part 3, p. 192.

paigned to stimulate the sale of securities. Such sales were utilized not alone to secure the necessary funds for expanding the industry but through an intensive campaign among consumers under the slogan "customer ownership" to create a large group of uncritical supporters in the public at large. The stock held by the latter group constitutes in the aggregate but a minor part of the total amount issued and being so widely scattered can exert no direct influence on utility policies.

#### b. Method

The organization proposed to bring about these ends chiefly by means of committees organized to promote particular phases of the problem as they saw it. Committees were named on (1) cooperation with educational institutions, (2) a survey of public utility education, (3) customer ownership and (4) on public relations. Policies determined by the committees are carried out by a regular staff. A great deal of the work is accomplished through the use of state committees. If the director of the National Electric Light Association publicity department wishes to get a certain viewpoint or information before the general public it is forwarded to the various state bureaus which will then circulate it among the member companies and the people at large. Of course the state director may accept or reject the material as he sees fit. He is under no compulsion to use it but for the most part he is cooperative.

#### c. Personnel

The members of the committees, unlike the Joint Committee, are selected principally from the officers of utility corporations to serve in an advisory capacity. Mr. George F. Oxley, the director of publicity, is chief in charge of the

publicity work but much of his policy is determined by the national committees.

#### THE STATE COMMITTEES

Both the National Electric Light Association committee and the majority of the state committees were organized after and according to the pattern of the Illinois committee, with modifications from time to time as practice and experience dictated. The methods and program are similar to the National Electric Light Association committee except that the committees operate in a limited zone. Some twenty-eight of these state committees were organized under the auspices of the national organization. They cover the forty-eight states.

##### *a. Purpose*

Their purpose is "to utilize all possible agencies for getting the case of the utilities before the people."<sup>10</sup> That purpose is identical with the aim of the National Electric Light Association. The extent to which the committees are determined to do this is well indicated in the motto of the Illinois committee, "Pitiless Publicity."

##### *b. Personnel*

The staffs of the state publicity departments are in almost all cases headed by men experienced in the newspaper field.<sup>11</sup> In addition there are typists, men to clip the newspapers and to keep track of editorial comment and sometimes trained writers. The Illinois committee for example was headed by Mr. Bernard J. Mullaney, a former newspaper man and head of the publicity department of the Illinois Council of Defense. His first assistant, Mr. R. R.

<sup>10</sup> "Nine Years of Public Utility Information," Illinois Committee on Public Utility Information.

<sup>11</sup> Statement of Mr. R. R. McGregor of the Illinois committee.



McGregor, had been an associate editor of a central Illinois paper. He is an experienced advertising man. In addition a staff of two college men and three or four typists is employed.

### c. Method

The committees aim to get their case to the people in a direct fashion by means of lectures, pamphlets, advertising and many other devices. Each publicity director has a staff of three or four members and in addition the cooperation of the individual companies with their public relations committee or officials. Their material is circulated through these committees, through stockholders, through the press and the public platform.

### ACTIVITIES

All available avenues of communication are used for the purpose of disseminating information to the general public. These may be classified as follows: (1) advertising and news editorials, (2) textbooks and teachers, (3) public speeches, (4) pamphlets, (5) political activities.

1. Of the five avenues, it is perhaps only natural that the directors with their newspaper experience should turn toward the *newspaper* as the most effective form of propaganda. The first and prime activity of all organizations has been press service to the newspaper. Mr. Bernard J. Mullaney of the Illinois committee expressed the policy of the committee in a letter informing the local companies of this news service when he said, "we want to get it used." He urged them to follow the items closely and to jog the editor's memory on it from time to time.<sup>12</sup> He also advocated that the representatives of the utility companies should establish relations with the local newspapers to the

<sup>12</sup> Senate Doc. 92, part 2, p. 74.

end that the latter might be better acquainted with the circumstances relating to the public utilities.

One of the methods used is cited in a letter written to a friend by the director in Missouri, J. B. Sheridan. One paragraph in the exhibit before the Federal Trade Commission runs: "Gee, Mr. Buck, what the country press is worth to people who are honest and use it honestly is beyond calculation. I have spent as much as \$300 in three years 'entertaining' editors. . . . All of them are God's fools, grateful for the smallest and most insignificant service or courtesy. . . . If we could stimulate a little local advertising for some of the leading newspapers, I think we will have the newspapers and the operators so closely associated that it will be impossible to split them in the near future."<sup>13</sup>

Mr. J. B. Sheridan also urged the use of money for advertising purposes in the statement: "Unquestionably, when you talk to most newspaper men they warm to you." This policy was nowhere more ingeniously and successfully carried out than in Georgia. Here the utility people seem to have persuaded the editors that all news about the utility problem had to be paid for. The industrial representative of the Georgia Railway and Power Company wrote: "Our greatest distress before we started the Committee was the printing by newspapers free of charge of propaganda written by public ownership fanatics. We answered those articles with paid advertisements and then insisted that the newspapers require the public ownership fanatics to also pay for the space they wanted. The result is that out of 250 newspapers in Georgia only four will publish anything at all from the public ownership people. . . ."

The editors of the newspapers were at liberty to use the material from the press service as they saw fit. The ma-

<sup>13</sup>Report of hearings before the Federal Trade Commission in the *United States Daily*, June 22, 1928.

terial from the Illinois committee went weekly to the 900 newspapers of the state. It was reprinted in news items and in the form of editorials and feature articles. Other committees followed the example. Just what effect these reprints have had is a matter of conjecture. Mr. S. T. MacQuarrie of the New England committee wrote: "These editorials have had so far reaching results that their value cannot be estimated in dollars and cents."<sup>14</sup> A fellow director reports of the success of their newspaper campaign in the following words: "Newspapers that were unfriendly have become friendly. Helpful editorials have appeared by the scores where formerly there were none."<sup>15</sup>

An attempt was made to keep account of the amount of copy that was reproduced in the form of news in the newspapers. This varied in several states. It may have been due to the varying degree of tenacity of the individual committees. The New England committee reported a total reprint of 8,000 column inches a year. This would make 56 solid pages of reading the size of the Boston *Herald*.<sup>16</sup> Other states reported similar amounts while Illinois led with 60,000 column inches, or 400 pages of the size of the *Herald*.

Another director wrote: "From the efforts of the Rocky Mountain committee literally miles of favorable publicity has been obtained in New Mexico, Colorado and Wyoming. Not only the average citizen, but legislatures, state officers and other public officers have been educated to a more favorable attitude toward public utilities."

The campaign for the use of the news columns in the Ohio papers met with gratifying success according to the director of the state bureau. In his words: "The entire cost of operating the committee is between \$20,000 and

<sup>14</sup> Senate Doc. 92, part 2, p. 169.

<sup>15</sup> *Ibid.*, p. 77.

<sup>16</sup> *Ibid.*, p. 169.

\$28,000 a year. The committee is getting many times that much result in mere newspaper space, more than they could buy for that amount. If we bought that space in advertising columns it would cost them \$100,000." He claimed 20,000 column inches a year.<sup>17</sup>

Just how much of this free publicity was due to a generous advertising policy is not known. It has been estimated that the utilities advertise to the extent of \$28,000,000,000 a year. The Illinois committee felt that the editors in this state were little affected by advertising. Mr. John B. Sheridan of Missouri felt, on the contrary, that liberal advertising would result in getting into the papers a good deal of information regarding utilities in the form of news or editorial comment. Referring to these activities he said: "You have got to grease the way for these campaigns. I believe that the utilities should advertise in the newspapers and I want to promote good will on the part of the newspaper toward the utilities."<sup>18</sup>

The New England committee reported through Mr. Samuel T. MacQuarrie that much of the criticism of the utilities by the newspaper men was due to lack of advertising. He adds: "The newspapermen say, 'If you want to use our columns there is plenty of white space at regular rates,' and I don't blame them. I think the newspapers very often put in things because we want them in. . . . I think that is a perfectly legitimate reason . . . the automobile people use a great amount of advertising and whenever they do, you will find an interview . . . it is put in there as a reading notice. It is simply put in because they have been advertising and they use the advertising because people will read it."<sup>19</sup>

<sup>17</sup> Senate Doc. 92, part 3, p. 431.

<sup>18</sup> *United States Daily*, June 22, 1928.

<sup>19</sup> Senate Doc. 92, part 2, p. 170.



Another avenue which was frequently tried for this type of propaganda was the Associated Press. According to Mr. J. B. Sheridan of the Missouri committee, "The Associated Press will prove invaluable to you. I think the word has gone down from headquarters to take care of the Committee on Public Utility Information. In any event, the local managers are very warm to public utility information. Of course this is a great advantage and we do not press it too strongly in Missouri." <sup>20</sup>

Besides such direct influences on the news and editorial columns other agencies have been subsidized by utility interests. This is best illustrated by the recent disclosures before the Federal Trade Commission concerning the news service carried on by E. G. Hofer and Sons of Salem, Oregon. Their specialty is "canned" editorials for newspapers. According to the testimony their clientele consists of 14,000 newspapers, some of which subscribed to the service at the rate of \$2 per year. Not a line of any of this material shows that it has been paid for by the utilities. The Hofers pose as unselfish missionaries laboring in what they believe to be the public cause and yet the evidence before the Federal Trade Commission indicates that the utilities have been paying \$84,000 per year for the last four years to this service. Mr. Hofer asserts that in that time no word of detriment to the utilities has been published. He boasts furthermore that the amount of material about utilities reprinted from the service would total 65,526 pages of reading for the four years.<sup>21</sup>

As an indication of the thoroughness of the campaign with the newspapers reference may finally be made to the systematic survey of the attitudes of the editors of the state of Illinois on public utility matters. This was followed by

<sup>20</sup> *United States Daily*, June 22, 1928.

<sup>21</sup> *Ibid.*, October 15, 1928.

a survey that covered the whole country. It was discovered in the Illinois investigation that the majority of the editors were unfavorable or lukewarm to what was considered the utility interests. After a space of time during which these editors were properly cultivated there was such a shift in opinion that the committee could express itself as entirely satisfied with the editorial situation.

2. A second activity was the use of the *schools* as avenues for the dissemination of information. Attempts were made to influence both texts and teachers. A survey of the texts used in Illinois on civil government, economics and citizenship revealed the fact that some of them were "no less than poisonous" from the viewpoint of the private companies. The utilities felt that something should be done about this matter. Mr. S. E. Boney of South Carolina wrote, "Please, for the present moment, regard this as confidential, for we are hoping through quiet and diplomatic measures to have some of these inimical books discarded." He went on to suggest that if those books were allowed to remain on the market one could readily see how the seeds of antagonism to the industry would be sown in the minds of the young men who were coming into business and public life, and proposed that something should be done by the industry as a whole regarding the perplexing condition.

In 1924 elaborate surveys of the textbooks used in the schools of the state were completed by the Illinois and the Missouri committees on Public Utility Information. Copies of these surveys were sent out to utility officials all over the country. These memoranda classified each textbook as "good," "fair," "bad," or "unfair," and sections of the books considered objectionable were quoted.<sup>22</sup> Objections were made on the grounds that the books favored municipal ownership, mentioned the lack of competition of mo-

<sup>22</sup> Senate Doc. 92, part 2, p. 151.

nopolies through which the public suffers, watered stocks, political corruption by corporations, corruption practiced in obtaining franchises and transit abuses. *American Citizenship*, by Charles A. Beard, professor of Political Economy at Columbia University, and Mary Ritter Beard, was listed as a "bad" book because some of the above practices were discussed in an unfavorable manner. The following quotation was given as an example of its undesirability:

"Like all other institutions, they [civic organizations] may be used against public welfare, as well as for it. An instance of the way in which public opinion may be 'manufactured' for private purposes was afforded not long ago in a great city where the extension of street car lines was under discussion. A street car company which was interested in gaining a certain franchise selected a prominent politician and gave him about a quarter of a million dollars to 'accelerate public sentiment.' He organized a Citizens' Association in the portion of the city involved in the affair, and got up public meetings in favor of the company's demands, incidentally disbursing large sums of money among influential persons. In the midst of so much clamor for his attention, it is not surprising that the citizen is sometimes bewildered and unable to form sound judgments."

Other books classified as "bad" include: *Our Government*, by J. A. James, Ph.D., and A. H. Sanford, M. A.; *City State and Nation*, by William L. Nida; *Government and Politics*, by William Backus Guitteau, Ph.D.; *Economic Civics*, by R. O. Hughes; *The New Civics*, by Roscoe Lewis Ashley; *The Citizen and the Republic*, by James Albert Woodburn; *Advanced Civics*, by S. E. Forman; *American Government*, by Frank Abbott Magruder, Ph.D.; *Government in the United States*, by James W. Garner, Ph.D.; *Elementary Principles of Economics*, by Richard Ely, Ph.D.

A national survey of texts followed and an appeal was made to publishers and authors to revise certain ones. In

many cases both responded to the appeal. Through the influence of his publisher a teacher in the University High School of Chicago, for example, was persuaded to change certain paragraphs in his texts regarding the utilities. He dropped further reference to the Insull contributions to the Frank Smith senatorial campaign. Mr. Joseph Groce of the Boston committee volunteered to act as a go-between in the matter of clearing up undesirable statements through the medium of the publishers. He wrote that he had many friends in the textbook business and felt that he could aid in bringing about the elimination of references in texts that from the viewpoint of the utilities misrepresented the industry.<sup>23</sup>

Further evidence is found in a letter written to Joe Carmichael, director of the Iowa Committee on Public Utility Information, by F. R. Jenkins, chairman of the Educational Committee, Commonwealth Edison Company, Chicago. The pertinent paragraph runs:

"Your letter of November 5th to Mr. Oxley has been referred to me. The Textbook Committee, of which I am Chairman, is still working on this proposition through the publishers, and I am promised a meeting week after next with representatives of the largest publishing houses in the country to conclude some suggestions which were made at the last meeting we had with them. Their reaction has been very favorable, and they are glad to work with us on this matter."

These adjustments proved fairly satisfactory to the utilities but it was felt that efforts should also be directed toward promoting texts that could be whole-heartedly accepted by the members of the industry.

The reports of the National Electric Light Association indicated that research funds "to a staff in public utility management" were being awarded to Harvard, "to produce

<sup>23</sup> Senate Doc. 92, part 2, p. 152.



an adequate textbook on public utility relations which would better appear under academic auspices than as a publication of the association." He added, "It is obvious that such literature bearing the imprint of the Harvard University would be quite generally adopted by other institutions." The various state committees also decided to cooperate more extensively with authors in furnishing materials and in aiding them to find publishers than they had done hitherto.<sup>24</sup>

A comprehensive survey of public utility education in the schools was inaugurated. A dean of a large state university was appointed to make the survey at a salary of \$15,000 a year. The purpose was to determine the extent and character of utility education in the various schools and colleges.

Finally \$32,500 was donated to a well-known midwestern university for the maintenance of a research organization whose purpose is to prove the fallacy of government ownership.<sup>25</sup> The source of these finances was not generally known before the revelations of the spring of 1928 were made at the Federal Trade Commission's hearings.

The public schools were not neglected in this avalanche of publicity material. The utility directors saw to it that their bulletins reached the teachers. The Pennsylvania committee claimed to reach 5,500 educators weekly. In addition to these, special pamphlets were written for use in the schools.

Hundreds of thousands of such pamphlets were circulated among high school and eighth grade students, particularly in New England, Illinois, Texas, Missouri, New York, Pennsylvania, West Virginia, Louisiana, Mississippi, Iowa and Nebraska. The report from the far western states

<sup>24</sup> Reprinted from photostat of exhibits—*Syracuse Journal*, May 10, 1928.

<sup>25</sup> Senate Doc. 92, part 3, p. 70.

is not yet in. The Ohio committee alone distributed almost 200,000 copies of a series called "Aladdins of Industry." Cleveland schools received 10,000 to 15,000 copies of these with the approval of the assistant superintendent of schools.<sup>26</sup> In 1927 a hundred thousand copies of a revised set of pamphlets were purchased by the New England director, S. T. MacQuarrie, the Rocky Mountain director, Mr. Lewis, and the Indiana director, John C. Mellett. These cost the directors only \$13.75 a thousand. All the directors were urged to purchase them. In Connecticut a Public Utilities Catechism was put into the lower schools.<sup>27</sup>

It cannot be denied that some of this material, perhaps much of it, served a useful educational purpose. It contained interesting and worthwhile information. But on the other hand much of it bears the stamp of bias and partisanship. Sweeping generalizations on highly controversial matters are presented without reference to complicating viewpoints and evidence in support of them. The purpose of such pamphlets was obviously in the main to win supporters, not to educate. In other words this was propaganda. Obviously the public schools should not open their doors to propaganda.

3. *Public speaking* is a third activity of the publicity organization and fully as important as other activities. In one year 1,500,000 people have heard utility talks, according to the estimate of the national organization. Ten thousand addresses were given in this period. The New England bureau organized more than two hundred executives and employees as speakers on utility matters.<sup>28</sup> This plan was adopted by more than nine hundred clubs and associations throughout New England. The Ohio committees were active in a different way. Their prime effort

<sup>26</sup> Senate Doc. 92, part 3, p. 426.

<sup>27</sup> *Ibid.*, part 3, p. 237.

<sup>28</sup> *Ibid.*, part 2, p. 173.

consisted in furnishing speakers to Rotary, Lions, Kiwanis, Real Estate and other civic clubs, chambers of commerce and to schools. The speakers emphasized (1) that the public utilities are subject to governmental regulation, (2) that more people are becoming financially interested in the utilities each year through the purchase of stock, (3) that the utilities pay taxes to the amount of \$24,000,000 yearly to the state of Ohio.<sup>29</sup>

Just how much of this public speaking was in the form of a direct and open appeal and how much was not cannot be ascertained. It is known that many utility organizations insisted that their speakers be properly introduced and their connections stated. Many did not. The accompanying letter indicates that Mr. R. R. McGregor and the Illinois committee were in the habit of using the chamber of commerce as a cloak for their speakers.

ILLINOIS COMMITTEE  
ON  
PUBLIC UTILITY INFORMATION

79 West Monroe Street  
Chicago, Ill.

November 10, 1927  
Exhibit No. 3621  
In the matter of SR 83  
Date 7/6/28 Witness Sheridan  
SCOCO reporter

MR. J. B. SHERIDAN, Manager,  
The Missouri Committee on Public Utility Information,  
Room 606, 1017 Olive Street,  
St. Louis, Missouri.

Dear Mr. Sheridan:

Replying to your letter of November 8th, it has been our custom for some time, as you know, to place certain educators

<sup>29</sup> *Ibid.*, part 3, p. 431.

before normal schools and other colleges in the state. We have no set rule or formula for this work—it being handled differently as circumstances seem to make it expedient.

More recently, we have adopted the plan of having a third party organization make the arrangement with the schools. In strict confidence, the Illinois Chamber of Commerce handled it for us during the last summer. We, of course, paid the bill. We try to keep away from announcing the talk to have anything to do with public utilities—our last talks being on the Government and Business.

In this placing speakers before schools, the job is most complete when you make arrangements with the speaker, who should be an educator of the highest standing, well-known, and accepted throughout the state.

Very truly,  
R. R. MCGREGOR,  
*Assistant Director.*

4. A fourth activity of all committees was the free distribution of *pamphlets and books*. The Illinois organization, for instance, reported that three-fourths of the high schools of Illinois used specially prepared literature on the utility industry in the classroom. All this material bore the stamp of the Illinois Committee on Public Utility Information. The aim of this free distribution was to “fix the truth about the utilities before incorrect notions got fixed there.”<sup>30</sup> In Ohio much the same practice was adopted. The Ohio committee estimated that they had distributed nearly 200,000 copies of “Aladdins of Industry” to the colleges and high schools of that state. Other pamphlets called Public Welfare Bulletins covering the elementary economics of the utility industry were prepared and distributed to 365,000 students in the former state.

In addition to these state activities, over nine million copies of the “Barton pamphlets” written by Mr. Bruce

<sup>30</sup> Senate Doc. 92, part 2, p. 78.



Barton were distributed to the security holders of electric light companies by the National Electric Light Association. The same organization supplied libraries and newspaper offices with 10,000 copies of James Mavor's *Niagara in Politics*, a book condemning the operation of the Ontario Hydro. Two other books that were circulated in great numbers deserve mention. These are S. S. Wyer's *Power Possibilities of Niagara* and the Murray-Flood Report on *American and Canadian Utilities Compared*. Both books condemned the operation of the Ontario Hydro and both provoked a retort by Sir Adam Beck, chairman of the Canadian Hydro, in which he accused the two reports of false interpretation of evidence and the misquotation of Dominion Law. The effect of this attack has been that the exponents of the American system have discounted the original works.

The form of other books and pamphlets is varied. One of the favorite forms for the schools is the romance. *The Romance of Power*, by Buckingham, and *Chicago's Genii*, by the Illinois Committee, *Gas, a Caged Wizard*, by Reed, and *Power for Supremacy* are typical bulletins of this type. The appeal is chiefly concerning the glories of the great changes that have come about due to science. For more mature readers such scientific articles as Frank Bohn's *Boulder Dam* and the two reports by Wyer and Murray-Flood are examples.

From the point of view of content, advertising, speeches and pamphlets stress chiefly the importance of public utilities to the public welfare, the amount of taxes paid to the city and state, what is called the failure of municipal ownership, the characterization of government ownership as a form of socialism, the effectiveness of government regulation, the necessity of a type of regulation that will allow the utilities to prosper and the relative insignificance of the amount of electricity transmitted across state lines. A

few treat of the cheapness of private operation, the alleged failure of the Ontario Hydro and the elementary economics of the utilities, etc.

It is apparent that we have here to do with a far-reaching program, involving a wide variety of appeals and finding its audience in all classes and age groups from the grammar school on.

It has been customary to use other organizations as the instrument of propaganda. This is by far the most reprehensible of the activities thus far disclosed, particularly when secrecy is specifically enjoined. Reference has already been made to the Illinois Chamber of Commerce. These are by no means isolated cases. One of the favorite methods of publicity, for example, has been to put out material under the name of some citizens' committee. The committee did not always represent the group indicated in the name, as in the so-called "Greater California League." In 1922 California was about to face the water and power issue. The Greater California League was to all outward appearances a group opposed to the act. Its character and purpose appear in a pamphlet called "Shall California be Sovietized?" The introductory sentence runs as follows: "The following statement concerning the act has been prepared by the sub-committee of the advisory committee of the Greater California League." In a subsequent investigation conducted by the Senate the fact was made known that the Greater California League was merely a name under which Mr. Gulliman, employed by the power companies, campaigned against the act. In his testimony Mr. Gulliman said, "It was like most political groups—never had a meeting—I appointed myself president and met with myself after employment." Under the pretentious heading of the Greater California League literature was widely circulated among the general public.

Other organizations were induced to cooperate with the utilities in various other ways. A former president of the General Federation of Women's Clubs was induced by the managing director of the National Electric Light Association to write twenty-four articles dealing with labor saving machinery in the home. Arrangements were made with the Lord and Thomas and Logan Agency for the placement of one article a month for two years at \$600 per article. The author understood that the National Electric Light Association would create an underwriting and revolving fund to which all proceeds from the articles would go and out of which she would be paid. Her articles were sent to the Logan Agency and she received payments from that agency. Before the Federal Trade Commission, Mr. George F. Oxley stated that the N. E. L. A. received only \$116 from the articles supplied, that the Lord and Thomas and Logan Agency was conducting at the time an advertising campaign for the N. E. L. A., that only twelve or thirteen of the articles were printed, and that the N. E. L. A. paid to this agency \$600 per month for twenty-four months in addition to a special commission. This arrangement was cleverly conceived, for the whole matter appeared as an agreement between the former official of the Federation and the agency until the facts were brought to light.<sup>31</sup>

The managing director of the National Electric Light Association recently circulated a letter among the publicity directors concerning what he considered a very valuable statement by Haley Fiske, president of the Metropolitan Life Insurance Company. This was sent to all policyholders of the company in their premium notices. In it policyholders were urged to consider the dangers of government encroachment on private property. Mr. George F. Oxley also advised that several life insurance companies had been

<sup>31</sup> Senate Doc. 92, part 10, pp. 33-48.

approached and that there was an excellent prospect of some of them following the lead of the Metropolitan. The directors of the state committee were at liberty "to use this in any way they saw fit but the director sincerely trusted that they would not in any way mention the National Electric Light Association in connection with it."<sup>32</sup>

The Rocky Mountain division of the same organization reported that the association had practically completed the draft of a model public utility law, adding that "the law has been turned over to the Public Service Commissioners Association which has promised to sponsor it, so it would appear that this was the work of the Commissioners Association rather than the utilities."

A final illustration under this heading has to do with a publication attacking the Ontario Hydro System that appeared under the imprint of the Smithsonian Institution. Mr. George F. Oxley of the National Electric Light Association testified that \$3,000 had been advanced to the American engineer, S. S. Wyer, of Columbus, to study Niagara Falls power problems in America and Canada. The evidence he collected was printed under the title of *Niagara Falls, Its Power Possibilities*. Mr. George F. Oxley conceded in his testimony that there was no question but that Mr. Wyer was receiving his pay from the National Electric Light Association when collecting information for the Smithsonian Institution Report and when on the roster of this organization. The arrangements with the National Electric Light Association were made in September, 1924, and the Smithsonian report was printed in January, 1925.<sup>33</sup>

5. The fifth activity is that of *influencing men in politics*. Mr. J. B. Sheridan of the Missouri committee wrote, "You must always bear in mind that a few wild politicians

<sup>32</sup> Senate Doc. 92, part 3, p. 222.

<sup>33</sup> *Ibid.*, part 3, p. 166.



in the state assembly can in a few minutes cause untold difficulties and do great damage. I have found in Missouri the best way to prevent this is to place the facts of the public utility operation in the state in the hands of candidates for the state assembly as soon as they are nominated and certainly upon election."<sup>34</sup>

Other methods were used besides the supplying of facts. The Senate Committee investigating election frauds brought the fact to light that utility officials were cultivating the political parties by means of generous donations, a single contribution amounting to \$125,000.<sup>35</sup> One prominent utility head testified to having contributed a considerable amount to both Republican and Democratic campaign funds.

By scanning the hearings before the Federal Trade Commission one can discover that all the customary methods known to the lobbyist were used for the purpose of influencing legislation. It will probably be conceded that the statement made by one of the publicity directors that they had used "every known method except sky-writing" was warranted and free from exaggeration.<sup>36</sup>

## II. Financing the Publicity Departments

In order to carry on the work of publicity the different organization had the cooperation of members skilled in finance as well as in counsel. To carry out the program of activities just described generous revenues were obviously needed.

The different utility companies of the country contributed in varying amounts to make the work of the first committee, the Joint Committee of Utilities, possible. The total revenue collected for the year 1927-1928 was \$1,079,198. This

<sup>34</sup> *United States Daily*, June 22, 1928.

<sup>35</sup> This was made by Mr. Samuel Insull.

<sup>36</sup> Senate Doc. 92, part 3, p. 214.

amount was made up of contributions of \$61,000 from the Insull companies, \$60,000 from the Electric Bond and Share, \$36,000 from the Brady group and smaller amounts from a number of companies.<sup>37</sup> With this amount the committee in cooperation with the three national branches and the state committees was able to wage an active campaign against legislation it considered harmful.

In the case of the National Electric Light Association and probably in that of the two other associations, the gas and electric railways industries, the finances came as regular appropriations in the form of dues from member companies. This has also been true of many state committees. The exact amount of revenue for publicity is unknown but a survey of certain costs of activities in the whole field indicates that it was ample. Mr. B. J. Mullaney has estimated that \$28,000,000 is spent each year for advertising alone. The National Electric Light Association (N. E. L. A.) committee has contributed \$40,000 to educational institutions for research; it has granted assistance to the General Federation of Women's Clubs in surveying home equipment; it has contributed toward making a \$45,000 moving picture depicting the electrification of agriculture. To the above amounts should be added the following: \$61,000 spent by the Illinois committee on pamphlets alone over a period of four years, the unreported expenses of twenty-eight state committees and the cost of the public relations activities of the individual companies. It is evident that the estimate of \$33,000,000 a year for the purpose of carrying on publicity is quite within reason.<sup>38</sup>

<sup>37</sup> Senate Doc. 92, part 3, p. 14.

<sup>38</sup> Estimate based on expenses of advertising as stated by Mr. B. J. Mullaney in his Northwest speech to the N. E. L. A. plus the cost of operation of the Joint Committee in their grants and various amounts spent by state committees, *i.e.*, Advertising \$28,000,000, Joint Committee \$400,000, N. E. L. A., \$250,000, State bureaus \$700,000, N. E. L. A. Geographical Association, \$237,000, etc.

The special nature of the utilities makes the financing of publicity organizations a peculiar problem. In private business the advertising cost can only be met by increasing business. This is the direct measure of its effectiveness. In the utility business, where publicity and advertising can be charged to operating expenses and where income is practically guaranteed, the increased cost may result in increased rates whether the advertising or publicity brings additional income or not. The costs are paid by the general public as a part of charges for services. Now when there is no known limit placed upon money that can be spent for publicity in the utility field comparable to the check of reduced profits or even losses in private business, the public is virtually at the mercy of the utility agents who can "educate" it as intensively and expensively as they please. That the utility members themselves regarded this situation in that light is revealed in a speech of the former director of the N. E. L. A., Mr. M. H. Aylsworth, at the Birmingham convention: "All the money being spent is worth while. . . . Don't quit now. . . . Don't be afraid of the expense, the public pays the bill."<sup>39</sup>

*Conclusion.* No one will dispute the right and the wisdom of spending considerable sums for publicity in the case of an expanding industry. Proper development requires ample finances and a rising demand. This means advertising and the dissemination of information on a wide scale. The major part of the publicity campaign of the electrical utilities might easily be justified and the majority of those responsible for policies may well be above reproach. But unfortunately for all concerned, certain officials in responsible positions have engineered a campaign that is characterized by misrepresentations and undercover methods of

<sup>39</sup> From photostat of exhibit reprinted in *Syracuse Journal*, September 26, 1928.

the most reprehensible sort. There are few of the arts and wiles known to modern high-powered propagandists that have been overlooked. The revelations before the Federal Trade Commission have served to discredit the industry as such in the eyes of the informed public. Whether deserved or undeserved, blame attaches to the responsible leadership. If the campaign described in this chapter is chargeable to the policy of giving zealous publicity "experts" a free hand, their misguided efforts should be officially repudiated and scrupulous care exercised in the future in maintaining those standards of "truth in advertising" that are set by the enlightened leaders of this calling. The management of the public utilities is under a peculiar responsibility in its dealings with the public. It has a guaranteed income granted under governmental authority. In a certain sense it is spending public funds. If in the use of these funds it or any of its agents seek to distort or suppress facts to its own advantage or to cloak its activities behind educational and other non-utility organizations, it is abusing a public trust and its leadership will and should be held blameworthy.

In order to safeguard the public from such abuses Senator Walsh, the author of the original Senate Resolution directing the Federal Trade Commission to investigate the public utilities, has introduced two bills designed to correct the alleged evils.

The first of the two bills introduced on December 5, 1928 (S. 4706), would prohibit any person or corporation engaged in interstate commerce from employing any teacher or school official to write a textbook or to revise a textbook already written or to teach any doctrine believed to be favorable to the party offering the employment. A penalty of \$1,000 or six months in jail, or both, would be provided



by this bill which was referred to the Committee on Education and Labor.

The second bill (S. 4707) would deny second-class mailing privileges to any publication printing matter, not obviously paid advertising, which was supplied by any person or company which paid the publication for display advertising unless the source of the material is plainly indicated. The bill was referred to the Committee on Post Offices and Post Roads.

Such legislative action should not be necessary if the leadership of the electrical industry is really imbued with the spirit of public service as is so frequently asserted. It is obviously an anomalous and illogical situation when the public has to resort to legislative protection against those ostensibly engaged in its own service.

## CHAPTER VI

### THE CRISIS

RARELY in the history of either government or industry does one single considered decision of policy determine the road for the future. More often is it the case that from time to time a number of small decisions are made, cumulative in effect. Only at some later moment do we realize that they have changed a whole situation definitely, that now a new policy is being followed, bringing in its trail implications and necessities of its own. In such a manner, for example, do nations find themselves getting into war.

The crisis in the public policy of control over the power industry is not spectacular. Here too there have been a number of small, often unnoticed decisions by commissions, courts and legislatures which have resulted in the present situation. Sometimes these have been decisions to take action. They have sometimes also been decisions to do nothing. The non-regulation of holding companies is in this category. Such inaction, such decisions, good, bad or indifferent, considered or casual, have brought us into the complications with which we are now confronted.

In the very near future there will be a series of other decisions to be made by legislatures, municipal councils, commissions, courts and the utilities themselves which will determine for a considerable period of time to what extent the benefits of engineering and other developments in the electrical field are to be shared with the consumers. Few of these will probably have even the small elements of drama so popular with the man in the street which were involved in the O'Fallon case, "the greatest law-suit in history," or in the conflict of minds and money which marked the decision of Congress on Muscle Shoals or in

a lesser degree its decision on Boulder Dam. Yet a few decisions by the commissions to the effect that they are ready to throw up their hands and acquiesce, a few other decisions by municipal councils and legislatures that they will do nothing about such acquiescence and the whole policy of utility control will definitely be changed. It is too early even to hazard a guess whether that change will put the utilities in entire mastery of the situation, give us an effective state and federal control or launch a government development plan on a heretofore unheard of scale.

One half of such an ambiguous crisis lies in the issues developed and the questions of policy actually involved. The other half lies in the way people see the issues as they take shape. This chapter aims to summarize the various factors that taken all together indicate that we may well be at the parting of the ways with regard to many aspects of utility control, in other words that a crisis in control confronts the people of the country and the utility interests.

The preceding chapter was devoted to a consideration of the public attitude toward utility matters. Thanks to utility propaganda it may be characterized as the attitude of acquiescence, if not utter indifference. If in spite of the revelations before the Federal Trade Commission the people continue to be undisturbed and the utility agencies continue to make them see what they want them to see, one of the most important issues in the crisis will have been settled. The passive approval of the public will be assured and the utility management will be given a comparatively free hand to exploit the industry like any other competitive enterprise, *i.e.*, primarily for profit.

#### THE ISSUES IN CONFLICT

Few of the specific issues that have emerged in the foregoing chapters can be completely separated from one another. They are in a large measure interdependent.

The first group has to do with the public service commission as the primary agency of public control.

1. First of all questions arise as to the character, the financing and authority of the commission itself. Serious doubts have been expressed concerning the qualifications and tenure of office of the commissioners as well as the technical ability of the permanent staff. This involves the matter of appropriations without which a properly equipped organization cannot be maintained. Substantial increases for practically all commissions seem mandatory if these bodies are to carry out the duties imposed on them by law. In many cases there must also be granted a considerable extension of authority in order to enable them to protect the public interest with any degree of adequacy.

As to individual policies, several changes stand out as of particular importance. The proposals made call for clarification and definiteness in some cases and new powers in others. Four such changes will be cited.

(a) As a matter of procedure in safeguarding the interests of the public—the commission's avowed purpose and function—it seems self-evident that the commissioners should divest themselves of their judicial robes and enter the arena as the defenders of the rights of those whom they represent. They are not or should not be primarily judges but rather guards, ever on the alert to take up the cudgels if need be in the popular interest. Individuals and often cities are lacking in the funds and technical knowledge necessary to effectively challenge great power corporations in the defense of what they conceive to be their just rights. If the commissions are not empowered or will not take the offensive either they or some other agency should be given the necessary power to do so.

(b) A second question of procedure has to do with the commission's responsibility for checking and, if necessary,



auditing the annual reports of operating companies. To put it bluntly, the commissions accept these reports; they do not audit them. To do this would require a staff of experts such as no single commission can under present conditions afford.

A practical consequence of this lack of genuine auditing control is the inability of the commissions not alone to check up on such companies as might resort to unethical accounting methods, but also to pass judgment on the efficiency of the companies under their supervision. The policy of granting the established rate of return to all units may even put a premium on inefficiency and extravagance.

(c) Clarification of policy is mandatory in determining valuations which serve as the basis of setting rates to consumers. In view of the prevalent confusion one is almost moved to say: Let it be prudent investment or let it be reproduction cost new, but let it be fixed. How much the Supreme Court has contributed to bring about the conflicting policies of the commissions by the inconsistency between what the court said and what it did was set forth at some length in an earlier chapter. It is to be hoped that the court will soon render a decision that will be clear-cut and free from inner contradictions so that an end may be put to the vacillations of the commissions on this, the most important phase of their work.

The present uncertainty surrounding the whole determination of values for rate-making purposes is working harm to both owners and consumers. It provides a potent cause for the fever of speculation under which the industry is now suffering. Certainty on this subject is essential, and such certainty that the commissions will be secure in their authority without the necessity or danger of an unbroken series of appeals to the courts.

(d) Lack of policy due to lack of legal authority is characteristic of the relations between the commissions and the holding companies which at the present time dominate the whole stage of electrical development. Maintaining that they do not fall in the category of utilities they often control or dictate the operating and financial policies of their subsidiaries. Many of them receive substantial fees for managerial, engineering and other services. Nevertheless not a single commission in the country has the power to supervise them.

The first and foremost question under this heading is as to when state legislatures will recognize the need of placing holding concerns under some effective public control. The longer positive action is delayed the more difficult will it be for public agencies to go back of accomplished facts which in many cases involve the payment of exorbitant sums for operating units and smaller holding concerns. It is reported, for instance, that in New York alone holding or purchasing operating companies paid within the space of the last four years (1925-1928) \$200,000,000 more for operating companies than the book value of the securities purchased. This is approximately 20 per cent of the estimated investment in the state.

Such transactions not alone in New York but in other states as well prompt the question as to what attitude will be adopted by commissions if and when holding companies come under their jurisdiction. Will they follow their earlier course when they first assumed supervision of the utilities and take the position that all past inflation of assets and all past security sales are so much water under the bridge but that careful scrutiny will be given to all future issues? The result of such a policy might be to restrain the holding companies from issuing further securities until the existing ones are on a somewhat sounder basis than at present.

This policy might, however, not be to the advantage of the consumers. If the commissions should decide that in order to give the holding company securities a more tangible base than they now have and that the operating companies should be allowed to write into their rate bases the prices which the holding companies paid for them, the consumers would then have to pay rates substantially higher than those now in effect.

The New York commission with the notable exception of one case, the Mohawk-Hudson Corporation, has always insisted in its official statement that sale prices should in no way affect rate proceedings. It has thus protected the consumer from the necessity of paying excessive rates on this ground. Yet in 1928 the National Association of Railroad and Utilities Commissioners adopted a report, which incidentally was signed among others by the chairman of the New York commission, that one of the several measures of fair value was the "price paid for utility property by its owners within a reasonable period of the time of inquiry." It contains the further significant statement that "value found in one case cannot be excluded as evidence of value in any other case involving the same property. The amount of bonds and preferred stocks authorized in a security case must bind, to a greater or lesser degree, the commissions to grant rates sufficient to pay the dividends on securities so authorized. Rates must provide the money for such payments." Such statements of policy endorsed by this body are indicative of the possible decision which the commissions may be expected to make, assuming of course that the legislatures give them a free hand on this point. Whether and how the legislatures will see fit to authorize the regulation of holding companies constitutes a major element in the present-day crisis.

2. The second series of pressing questions has to do with

conditions that transcend state boundaries and call for action on a nation-wide scale.

(a) Attention has already been called to the limitations under which the Federal Power Commission, authorized to supervise the development of sites on navigable streams, operates. A cursory reading of the last annual report of the commission will convince even the sceptical that the organization and finances are woefully inadequate for the performance of the important functions assigned to the commission under the law. As a consequence the law is virtually emasculated through the lack of a properly equipped agency to administer it.

(b) The consolidation of operating and holding companies has long since ignored state boundary lines. Therefore even if the legislatures of the states should put them under the control of the several commissions the dominating concerns would be above and beyond restraint so far as their major operations are concerned.

The best evidence of this is the recent flouting of the Federal Trade Commission on the part of the powerful Electric Bond and Share Company. It refused to give the commission access to its books on the ground that it is not a utility, even though the commission was armed with the authority of Congress and was acting under its instructions in investigating the industry.

It has been demonstrated that the financing and often the policies of operating companies are inextricably interwoven with those of the holding companies. If the latter are engaged in interstate business and are continuously becoming more so, how can one speak of controlling the electrical utility as a public utility unless some federal agency may not alone investigate but also audit the transactions of those great combinations?

(c) The same question of the need of federal supervision



arises in connection with the wholesaling of power across state lines. Whether this will become more and more characteristic of the industry or not, enough interstate transmission is already under way to warrant federal legislation. Even though the extent of such transmission is limited today it is bound to increase as the demand mounts and the feasibility of long distance transmission is demonstrated. This applies both to steam and to hydro generated power. In the main economic and social movements and interests take little heed of political lines, nor should they do so. If New York and Pennsylvania and New Jersey form an economical unit from the point of view of the production and consumption of electricity, as they are said to, the field should be developed as a unit and some federal or regional agency authorized by the central government should exercise supervision. Interstate transmission will increase under normal economic conditions. If those in control as a matter of policy avoid transmission across state lines in order to postpone the time of federal control, an uneconomic development of the industry will result.<sup>1</sup>

But even in view of existing conditions the question is warranted as to whether the operations of companies engaged in interstate transmission should not be under some public oversight.

(d) If the evasion of federal legislation is a determining motive of those responsible for the expansion of the industry, if competitive and speculative consolidations are now in the order of the day so that the electrical map of the country looks like a crazy quilt, is the time not ripe for a scheme of organization and expansion that will be nationwide in scope?

<sup>1</sup>Newspaper reports indicate the intention of the new merger just launched under the J. P. Morgan Company to operate its subsidiaries with reference to state lines for the purpose noted above. (*New York Times* January 11, 1929).

Has the country not learned the extravagance and waste of the above methods in connection with the railroads? Has the time not come when the public interest demands a nationally organized and consolidated system of generation and transmission just as it is now demanding a nationally coordinated railroad system?

This suggestion does not necessarily involve government ownership. It does involve national leadership and supervision. How it can be worked out through state and regional cooperation under federal supervision is a matter worthy of immediate consideration. The experience with the railway control under the Interstate Commerce Commission might be used to good advantage in reducing the legal complications. At any rate national planning is inherent in the electrical situation. Sooner or later it will be dictated both by sound economics and by the welfare of the public. Although perhaps not generally recognized it is a part of the crisis confronting the country.

3. A final problem that will have to be settled in the near future is as to whether such major resources as those at Muscle Shoals, Boulder Dam and the St. Lawrence shall be utilized as a means of lowering rates to consumers by the public generation of power and the public control of distribution by means of contracts. There are those who advocate the leasing of the plants to private concerns after construction. Many question whether the government could find a market for the power if it should plan to generate and sell at the bus bar. Again it is alleged that the transmitting and distributing companies could so load their costs that the consumers would gain little or nothing in the end. On account of the problem of transmission it is further claimed that the plan of selling to municipalities and other public agencies as were provided in the Muscle Shoals and Boulder Dam bills will prove to be a futile hope. The

advantages and disadvantages of public competition in regard to these enterprises will be reviewed in a later chapter. It is pertinent to point out here only that major decisions of far-reaching significance are in the offing because of the attitude of Congress on Boulder Dam and Muscle Shoals and of the prevailing opinion in New York as to the need of taking action on the St. Lawrence project. The outcome of these decisions may mean the strengthening of the hands of the private companies or it might even mean the development of interconnected groups of municipal companies at the other extreme. Such are the potentialities of the impending decisions on the utilization of these great national resources.

*Conclusion.* Reference might well be made to still other controversial matters to indicate the scope of the conflict between those who represent private and public interests and of the dissatisfaction of the latter group with the present status. Evidence of this may be found in the fact that the New York State Legislature in its 1929 session passed a bill calling for a thoroughgoing investigation of the Public Service Commission and its operations. One of the most mooted questions in this same legislature is as to the method of further developing the water resources of the state, particularly centering about the St. Lawrence. The Massachusetts Commission is taking energetic measures that look toward the maintenance of its policy of setting rates on the prudent investment basis. Government and municipal ownership is being advocated more and more frequently as the only alternative. Finally the success or failure of the Ontario Hydro Electric Commission is a matter of perennial interest and one constituting a story in itself.

In view of the above controversies and problems it can hardly be doubted that there is a crisis in the public control of the electrical utility. This is due not alone to the inherent

complexities and the unexplored possibilities involved but also to the complacency of the general public which has been partially induced at least by systematic propaganda.

It is generally recognized that we are only on the threshold of the Electric Age. It should also be generally recognized that we are hardly on the threshold of public control. In fact such control as exists is not far from the breakdown stage. With the public indifferent or acquiescent it is easily conceivable that many pressing issues will remain undecided for an indefinite period while others will be handled in a way that runs directly counter to the public interest. Even in case of inaction the obligations of the public may easily mount step by step as, for instance, if the holding companies are suffered to pursue their operations further without let or hindrance. It goes without saying that these obligations, whatever they may be, will have to be met. When confronted with accomplished facts the confiscatory clause of the Constitution prompts the courts to rule in favor of those who have accomplished them.

In other words, all of the factors of the crisis as cited above call for prompt and positive action. With many of them impending events will compel it in one direction or another. With public spirited leadership and a fair degree of participation on the part of an intelligent minority of the people the electrical industry may be brought to a realization of what it indisputably is, namely, a semi-public industry with equal responsibilities to investors and to consumers.



## PART II

The second part of this volume is devoted to a consideration of various types of public control that might contribute to the solution of the crisis described in Part I. The possibilities and complications of effecting a greater or less measure of control through contracts and public competition are reviewed. The problems involved here are by no means hypothetical because they center about the implications of the Massachusetts proposal and the Boulder Dam and Muscle Shoals bills.

The present schemes operating in England and Ontario are then described in the belief that they may give rise to suggestions pertinent to the problems of control.

Finally the feasibility of unified national ownership is canvassed since this solution is not infrequently advanced as the one way out.

In other words, Part II has to do with possible measures, both more and less feasible, that may profitably be considered in view of the crisis discussed in the preceding pages.



## CHAPTER VII

### CONTROL THROUGH CONTRACTS

ONE of the most readily available solutions to the present crisis in the electrical industry involves the power of the state to make contracts with operating companies. Such contracts would supplement the present regulatory system which is almost wholly derived from the police power of the state. The proposal is to bind the companies to accept, in return for the various privileges and charters granted them by the state, the very kind of regulation which the state commissions originally tried to enforce before they were thwarted or misled by the dicta of the courts.

The use of the contract power has been customary for a long time, mainly in the form of franchises granted by states or municipalities to railroads or local utilities. The change in the jurisdiction over railroads from state to national control, and over the utilities from local to state control, has involved the cancellation of many franchises and given rise to a certain amount of feeling that this too is an unsatisfactory method of procedure. When the railroads were released from state control such franchise terms as the states had secured were canceled. For example, in return for the use of certain lands in New York, the New York Central Railroad guaranteed to charge a maximum passenger rate of two cents per mile from New York City to Albany. The Interstate Commerce Commission later adopted the policy of establishing uniform rates, thus annulling the above agreement once and for all. At the time of this writing the Interborough Rapid Transit Company of New York City is trying to break its contract with the City of New York, to charge no more than five cents for subway fare. The contention is that the state regula-

tory body has assumed control and that the city's contract is thereby superseded and made null and void.

While such shifts in jurisdiction, made to meet the changing conditions of utility development, have involved the breaking of agreements between the states and cities and utility companies, it has practically been settled so far as the relations between public authorities and the operating companies in the electrical industry are concerned. The latter are definitely under the jurisdiction of the public service commission in which they operate, according to the Supreme Court decision already cited. Furthermore there is no question concerning jurisdiction as between the states and the municipalities in the more progressive states. The former now exercise virtually complete control. With the jurisdictional question settled the use of contracts may perform a much needed function in the regulatory process.

There are two ways in which the use of contracts with public utilities is of interest now. The first one is the proposal of the Massachusetts regulatory body to bind all power companies in that state to continue to accept the form of regulation now customary in the state, a procedure under which rates are based on the net prudent investment and nothing else. The second one is to safeguard the interests of consumers in case several large water power plants should be constructed and operated by the government which would then sell its power to private transmission and distribution companies. The contract proposal in this latter case is made to prevent the private companies from absorbing all the advantages of the cheaper power.

Massachusetts is in a somewhat different situation than the other states. Until 1927 it was not troubled by any serious attempt of the companies to claim the artificial rate base of reproduction cost new. In that year, however, the Worcester Electric Light Company appealed in the federal



courts an order of the Department of Public Utilities reducing its maximum rate from seven to five cents. It succeeded in securing an injunction until the case were tried before the federal district court. The department interpreted this as the beginning of a movement by all the companies in the state to overthrow the Massachusetts doctrine of prudent investment by appeal to the federal court and immediately made a proposal to the legislature that this attempt be thwarted by use of the contract power.

Most of the blame for the attempted change is laid by the department on the holding companies, which have, it reported, bought many of the Massachusetts operating companies at high prices and now wish to be repaid by high light and power rates. It found itself confronted with the unusual prospect of long and expensive hearings during which each and all of the companies would seriously present the value of the property based on cost of reproduction less depreciation as a base on which they were entitled to receive a return. It found also that the delay involved sometimes a matter of years before the Supreme Court could come to a decision and would consequently work hardship on the consumers who were supposed to get the benefits of the lower rates ordered. In other words, it found itself confronted for the first time with the same situation which all the other states have accepted. It did not choose to accept it.

In recommending a bill to the legislature to protect the consumers from the breakdown of the regulatory system, the department stated: "The danger of the so-called United States Supreme Court doctrine being enforced in this Commonwealth is so great that we think that we should at this time make preparations to avoid the results of such a doctrine. This doctrine promotes greed and gluttony upon the part of the owners of the public utilities. It asserts that the owners of the public utilities are entitled to retain and earn

a profit upon excessive earnings which they may have exacted from the public. It asserts that the public has no real control over these utilities other than an ineffectual method of regulating rates, notwithstanding that the public gives to them exclusive rights in the highways and confers upon them the sovereign power to take private property by eminent domain. Moreover it asserts that the property of the utility is increased in value by improvements in the public highways and that the owners of the utility are entitled to increased earnings by reason of these improvements and of the enhanced value upon its property resulting from the growth of the communities. It also asserts that the owners of the utility are entitled to earnings upon the reproduction value of the property less depreciation, notwithstanding the service performed by it could be performed as well, if not better, by property that would cost much less."

This analysis of the situation confronting Massachusetts is very similar to the analysis of the functioning of the present regulatory system in other states as discussed in the earlier chapters of this volume. To meet it directly the Department of Public Utilities recommended to the legislature: ". . . we feel that the time is now ripe to enact legislation by which the companies engaged in the sale of gas and electricity in this Commonwealth shall enter into a contract with the Commonwealth so that their rates may be speedily and effectually regulated with fairness both to the company and the public, and whereby the investor will be guaranteed that in no event shall rates be so regulated that he cannot sell his securities to obtain his original investment."<sup>1</sup>

The bill proposed provides for a capitalization of all com-

<sup>1</sup> Both the above statements were made by the department to the legislature, December 7, 1927.

panies petitioning for it on a basis which will approximate the amount paid into its treasury on account of the issue of its capital stock, plus the amount which would have been paid in dividends so as to average seven per cent return to the stockholders. This adjustment of capital is in itself to effect a contract between the company and the commonwealth by which the former agrees that it may be regulated by the latter in such manner as the commonwealth determines, so long as such regulation does not prevent it from paying dividends upon its stock adequate to maintain the stock at par.

In case the utility companies should not care to enter into such an agreement two further proposals were incorporated into the bill. The first was the practical repeal of the Massachusetts statute requiring a municipality which desires to engage in the sale of gas or electricity to purchase the plant of the private company now furnishing the service. The second was a denial to the companies refusing to make such a contract with the commonwealth of any further right to exercise eminent domain or to increase their capital stock or bonded indebtedness. The bill also provided that any new companies formed after its enactment should automatically be subject to the provisions of the act and that their organization should effect a contract with the commonwealth to that effect.<sup>2</sup>

This was in effect a threat to use the privilege of the state to withhold any future grants of power to those utilities which did not continue to accept the Massachusetts system of regulation. One special protection which they had secured, a statute making it obligatory for municipalities to purchase the existing plants when they went into the field of utility ownership, was to be withdrawn.

<sup>2</sup> See Massachusetts House Bill No. 170 with suggested Amendments incorporated, Appendix No. III.

The subject was remanded to the department by the legislature for further investigation. If the federal court had decided against Massachusetts in the Worcester case the above bill, or one similar to it, would have been pressed. The department saw as the only alternative to the proposed contracts a system of public ownership.

The other states are not in the same position as Massachusetts. They have for a varying number of years partially allowed the contested rate base of reproduction cost new. They would experience some legal difficulty in enforcing a contract with the utilities on a basis exactly like the one proposed in Massachusetts. The courts might be expected to hold that the investors had not been forewarned and so not adequately protected. The other states can, however, use the suggested procedure in regard to all newly formed companies within their jurisdiction and also in regard to all new capital invested in the industry. They can hold valuations down to actual investment and exclude them from revaluation.

The second way in which the use of contracts is important at present comes from the possibility, discussed later, that several large water power developments will be undertaken by federal or state governments. Boulder Dam, Muscle Shoals and the St. Lawrence are among these possibilities. The development of the St. Lawrence project may well serve as an illustration of the proposed scheme of control by contract. As is well known, the St. Lawrence River is the largest single power resource not yet developed in New York State. By an understanding with the federal government it is practically under the control of the government of New York State. Definite proposals have been made for the erection of dams and power houses looking toward the generation of electrical power to be marketed in the interests



of the public under contract with distributing companies, whether public or private.

Assuming that the power is being produced the first step for the government agency charged with the responsibility of generating power is to determine its cost of maintenance and operating expenses. It would also determine the amounts necessary each year to pay interest charges upon the money borrowed to build and equip the plant as well as the annual amount to be set aside to retire such bonded indebtedness. The total of these items would represent the income which the state must receive from the sale of the resultant power. In this way it would determine the wholesale price per horsepower-year to be charged in the contract. It would then be necessary for some competent body to fix the actual investment in the properties of the purchasing organizations used in the process of transmitting and distributing the power, and to determine a proper charge for the operating expenses of such company. It might then easily estimate the amount of power which would find its way to the several classes of consumers and on this basis adjust the rates which would bring to the operating company a revenue sufficient to pay all operating expenses and leave a net income which would constitute a fair return on the private capital invested in the property. Thus the retail rate to all classes of consumers would be included in the contract.

The same policy might be applied to national or federal projects. It has been proposed repeatedly in the last three or four sessions of Congress that the United States or a public corporation created for the purpose should develop the water powers available at the Boulder Dam and Muscle Shoals sites. Should this be done and the United States, or a public corporation, generate electricity at these sites, it would be in a position to enter into contracts for the

sale of the power. The Federal Power Commission has demonstrated its ability to set up rigorous accounting standards and to evaluate project works so that the determination of the rate base on the prudent investment theory would be as effectively accomplished as by state commissions. All that would be necessary is the contract agreement between the public agency and the private purchasing company to the effect that all intangibles should be eliminated and the retail rates to the consumer be fixed on the basis of a fair return upon capital actually invested.

We have assumed for purposes of illustration that the government or some public body would build and operate these projects. It must be said, however, that should it be deemed wise to lease the dams and power houses built by the government and to allow private corporations to operate them, even then the contract principle might be applied. A lease is a contract. It would be quite possible to make the conditions of the leases for the above sites similar to those of the Federal Power Commission. This would mean including in the lease provisions which would effectively eliminate intangibles and definitely establish the prudent investment principle. The acceptance of the lease by the private company with such provisions would be binding upon the company to the same extent as a contract.

A possible limitation to the effectiveness of contract control has been suggested by the advocates of the present type of control through public service commissions. It is that the private companies might refuse to purchase the power from the state if it were necessary to enter into a formal agreement as to retail price. There is a possibility, it is argued, that the purchasing companies might hold out for a higher price than would naturally be allowed under this method with the result that one of two things might happen. Either the public agency would have to bow to the

private company's demand, in which case contract control would mean nothing, or else the public would be unable to sell the power and would be left with an expensive "white elephant" on its hands.

There are two comments to be made on this suggestion. First of all it seems quite reasonable to assume that this will not happen. The private companies are not likely to refuse to buy power from the state under such circumstances because to do so would place them in a decidedly embarrassing situation. They have been very earnest in their public relations work in expressing the idea that theirs is a public service. They have insisted that they are serving the public at the very lowest possible rates consistent with fair profits. If they were to refuse to buy power from the state and to agree to resell it at a reasonable profit they would be denying their own protestations. But it is conceivable that the private companies would dare run the risk of being challenged in this regard and would refuse to buy the power.

In case of refusal the public service commission would be within its rights in compelling the distributing companies either to purchase the publicly generated power or to sell other power at equally low rates which would require the generation of such power at cost, *i.e.*, without profit to the producing company. If this proved to be unenforceable the final alternative would be that the government or a public agency develop a system of transmission and distribution for the purpose of selling the power to municipalities in competition with private companies. There are many who argue that this should be done in any case so that the private companies would have to meet a vigorous, competitive public industry to the end that they be put upon their mettle. At all events it is clear that this policy would become socially desirable should private companies refuse to

take advantage of large national resources on a fair and reasonable basis.

There is nothing illegal, unreasonable, arbitrary or confiscatory about the contract method of control. There is no valid reason why the power companies should refuse to cooperate with the state. The sale of considerable blocks of power under the above circumstances would insure the consumer a real protection. As has been pointed out, it would benefit not alone those customers who are purchasing from companies whose rates are fixed by contract but also those who are not so favored. Although there might not be direct competition between companies using power generated by a governmental agency and those generating their own power, the rate schedules of the two groups operating in the same vicinity would necessarily approximate each other. Public opinion would not tolerate an unduly wide divergence. In this way a limited number of large-scale, strategically situated generating plants, operating under governmental authority, would provide "measuring rods" that would from the public point of view have a wholesome effect on the rate structures all over the country.

Since the whole argument of this chapter is based on the validity of contracts between public agencies and private companies the final section of this chapter will be devoted to a discussion of the feasibility and limitations of contracts fixing rates along the lines proposed.

#### THE CONTRACT POWER OF THE GOVERNMENT

Generally speaking, contracts are protected by the state and federal constitutions. They are enforceable against both parties to an agreement in all the courts of the land. The government has the power to enter into such agreements or contracts with private persons or corporations. Thus a way presents itself whereby the interests of the



power consumer can be protected. The details of the process of controlling rates by the contract method may be summarized in the following manner:

Whenever the government of either state or nation owns and controls water power resources it is in a position to lay down the conditions of its sale or use. The existence of differing opinions as to the method to be utilized is admitted. But for purposes of illustration it is here assumed that the government or a public corporation will develop these resources and generate power for sale to private or municipal companies.

The power of the government to protect consumers through contract rate control in the case of public utilities has long been recognized. The state in granting franchises to public utility companies to operate railroads, light and power companies, water companies, etc., has granted such franchises upon condition that the company shall not charge rates in excess of those stipulated in the franchise or contract with the state. The obligation of the utility to serve the public at these contract rates has been enforced even though those rates later became in fact confiscatory.<sup>3</sup>

To compel a public service corporation to carry on its business at a loss, or any part of it at a loss, deprives it of property without due process of law but if it continues to exercise the powers conferred on it by a charter from the state (a contract) it may be compelled to fulfill such obligation even though at a loss.<sup>4</sup>

This conclusion applies so long as the purchasing companies sell directly to consumers, but complications arise when they wholesale power to distributing companies which resell to the consumer. The question here is as to whether

<sup>3</sup> *Cleveland v. Cleveland City Ry.* (1904) 194 U. S. 517. *Columbus Railway, Power and Light Company* (1919) 294 U. S. 399.

<sup>4</sup> *Missouri Pacific Railway v. Kansas* (1910) 216 U. S. 262.

the courts will find an agreement illegal which fixes a resale price to ultimate consumers. It is to be anticipated that this will be raised by some who may regard the body of private law prohibiting agreements for price maintenance in resales as applicable to this situation. The decisions under the common law against restraint of trade and those under antitrust legislation hold as illegal contracts made by persons or corporations wholesaling commodities to maintain resale prices. Under statutes resale price agreements have been held illegal as unfair methods of competition.<sup>5</sup>

The Supreme Court sums up this doctrine well in the case of *Federal Trade Commission v. Beechnut Packing Company*, 257 U. S. 452:

"By these decisions it is settled that, in prosecutions under the Sherman Act, a trader is not guilty of violating its terms who simply refuses to sell to others, and he may withhold his goods from those who will not sell them at the prices which he fixes for their resale. He may not consistently with the act, go beyond the exercise of this right and by contract or combinations, expressed or implied, unduly hinder or obstruct the free and natural flow of commerce in the channels of interstate trade. . . . If the Beechnut System of merchandising is against public policy because of its dangerous tendency unduly to hinder competition or to create monopoly, it is within the power of the commission to make an order forbidding its continuation. . . . The facts found show that the Beechnut System goes far beyond the simple refusal to sell to persons who will not resell at stated prices, which, in the *Colgate* case was held to be within the legal rights of the producer."

Thus it is clear that private companies or corporations engaged in wholesaling commodities in a competitive field cannot make legally binding contracts to maintain resale prices.

<sup>5</sup> Section V, Federal Trade Commission Act.

But it is highly improbable that this doctrine will be held applicable to contracts between the government and private distributor companies specifying the rates at which the distributor companies shall supply energy to consumers. The reasons for this opinion are: (1) In so far as the doctrine holding agreements to maintain resale prices to be illegal is based on the antitrust act, a well-settled rule of statutory construction would exempt the government or its agencies from the operation of the doctrine. Black, in his *Interpretation of Laws*, expresses himself on this point in the following words:

"General words in statutes do not include or bind the government by whose authority the statute was enacted where its sovereignty, rights, prerogatives, or interests are involved. It is bound only by being expressly named, or by necessary implication from the terms and purposes of the act. This is a very ancient rule of English law, and is equally applicable to the state and national governments in this country."

In line with this position it may be pointed out that the United States as a creditor is not bound by federal bankruptcy acts.<sup>6</sup>

Our conclusion is therefore that federal or state governments should not be bound by rules developed under the Sherman Act or the Clayton Act to apply to private persons or corporations; or, in other words, that they would be free to fix ultimate rates to the consumers by contract whether the sale of electricity were direct or involved one or more resales.

It may be pointed out further that the doctrine against contracts for resale price maintenance is derived either from statute or common law rules against restraint of trade. The purpose of this doctrine is the protection of free competition. Of the two acts embodying this doctrine the one,

<sup>6</sup> U. S. v. Howes, 15 Fed. Cases, 359.

the Sherman Act, is directed against private monopolies and the other, the Clayton Act, is directed against unfair methods of competition. Thus both apply to fields of enterprise in which the consumer depends for protection upon a measure of free competition. But the development and distribution of electrical energy has long been recognized as an enterprise so impressed with a public interest as to be withdrawn from the fields of free competition. Exclusive franchises are upheld in this field because of the monopolistic character of such enterprises and further because state regulation is also recognized as legal. That a doctrine designed to protect consumers of commodities produced and marketed in a competitive field should be applied to the non-competitive enterprise of developing and distributing electrical energy is highly improbable.

Moreover, in private contract cases involving the problem of resales the purpose was to control the minimum price level, whereas in the proposed contracts between the government and distributing corporations the agreement is only to set a maximum charge above which the latter cannot go. Even on the basis of private law this might serve to distinguish these power contracts to fix rates from ordinary contracts to control prices.

This method of control would in no way prevent the establishment of varying or sliding-scale rates for different classes of consumers, such as domestic, industrial, agricultural or municipal. Provision for such differences could be easily included in the contract. It would also be possible and quite necessary to provide for alterations and adjustments in the rates in case they should prove to be too high or too low as judged by the standard of fair return on actual investment. None of the practices of the industry which have been found to be economically sound would be interfered with in any way by the adoption of this method of



control. Its one effect would be to eliminate intangible values from the rate base and to establish in a definite manner the principle of fair return on actual investment. After the physical properties involved in supplying the service were examined and their actual reasonable value fixed by competent authority rate making, the crux of public utility regulation under the principle of allowing a fair return upon such value, would become a definite and precise proposition.

## CHAPTER VIII

### PUBLIC COMPETITION AS A MEANS OF CONTROL

IT HAS been frequently maintained that the most effective means of control of public utilities is public competition. This method of control has had some success both in this country and abroad. No better evidence could be asked than the experience of cities on the western coast where a number of municipalities in competition with private concerns have brought about a marked reduction in rates for electrical power. Those who argue that the public is bound to fail in such an enterprise will find it difficult to explain the nation-wide propaganda that has been carried on by the companies engaged in this industry. The attitude of the latter seems not to be of the fear of failure on the part of the public but that of success. They have had ample grounds for objecting to such competition on that basis and for seeking to limit it to the utmost.

The argument against public competition is based on the theory of economic individualism which is hardly pertinent to such a quasi-public industry as the production of electricity. As was pointed out in the Introduction, the power industry is essential to the well-being of the people; it makes use of public resources, properties and powers; and it is monopolistic in character. If private industry does not serve the consumers economically and efficiently, if it insists on conducting its business as though it were a simple profit-making private enterprise, the public should not be stopped from entering the field as a competitor because of a theory of economics that in its very nature is based on the assumption of free and untrammelled competition. In case profit making rather than service giving becomes the policy of a highly protected and favored utility the public is fully

justified in taking such steps to supplement regulation as serve its interest, whether this means competition or complete ownership.

In this chapter "public competition" is discussed as meaning government ownership of generating facilities in three or four huge power plants and the control of rates for such power by contract.

Two factors have given rise to the general discussion of the advantages of public development of certain water power sites. The first is the recognized inadequacy of present methods of regulation and the possibility of supplementing these by competition in the areas concerned. The second is the need of conserving and utilizing large power resources still in the possession of the public. The latter factor has been particularly prominent in the controversy that has been waged in Congress over the proper disposition of the great power plant at the Muscle Shoals and more recently over the Boulder Dam project on the Colorado River. The majority of both houses of Congress favored as one of two alternatives the public operation of Muscle Shoals. Congress passed the Boulder Dam Bill in the short session of the Seventieth Congress. This provided for public construction of the dam and power house. The question of public operation was left to the discretion of the Secretary of the Interior. Considerable attention has been given to the development of the St. Lawrence as a third "key center." The Columbia River project in the Northwest has also been proposed by some advocates of this method of public competition as the fourth.

The first part of this chapter is devoted to a discussion of the possibilities and the methods of utilizing the first three of these publicly owned resources as "measuring rods" for the electrical industry.

The underlying policy which has met with favor in Congress is based on, (1) governmental construction of the necessary plants, (2) generation of power by the government, (3) sale of power at cost to political subdivisions or to private transmitting and distributing companies which would contract to resell that power at specified rates sufficient to insure a fair return on the actual investment and operating expenses.<sup>1</sup>

The Muscle Shoals, Boulder Dam and St. Lawrence projects have been considered peculiarly well-suited to serve as "measuring rods," both because of their strategic location and because of the large amount of power available. It is believed by the advocates of the proposed plan that if this power were marketed at reasonably low rates it would not alone benefit the consumers and the industrial growth of the nearby sections but also become an effective check on all rates in large sections of the country. For this reason these three units are looked upon as possible "measuring rods."

#### MUSCLE SHOALS

The first project is Muscle Shoals. It is situated on the Tennessee River in the northern part of Alabama. It is already a going concern. During the war the United States built a large dam (Wilson Dam), power houses and a steam power plant and erected in addition certain works for the manufacture of nitrates, an essential constituent of explosives. At the close of the war the government found itself with this project on its hands, but with no provision for its use in the times of peace. The project cost the government in the neighborhood of \$150,000,000. Since Congress and the President did not succeed in reaching an agreement as

<sup>1</sup>In the Boulder Dam Bill these last two points were left to the discretion of the Secretary of the Interior.



to the disposal or future development of the plant, this tremendous power resource has not been utilized to the full. About 27 per cent of the present capacity, or 1,000,000 kilowatts per day, an equivalent of 100,000 horsepower, is being used and the resultant power sold to the Alabama Power Company on a short-term arrangement pending action by Congress. From September 12, 1925, to September 30, 1928, 1,392,028,975 kilowatts were sold at an average price of 1.8 mills per kilowatt hour. Since the war various and sundry proposals have been made with reference to the plant. These range from outright sale to private companies to development as a public project, with leases to private companies for fifty years as a middle position. After extensive debate a bill was passed by Congress in 1928 providing for use and development under governmental auspices. This bill was given a pocket veto by President Coolidge.

The Muscle Shoals proposal to be judged properly must be regarded from the point of view of the possible ultimate development of the entire Tennessee River system into a huge interconnected arrangement of dams, power houses and transmission lines. It seems quite probable that should this whole river system be developed there would be over a million horsepower available for the southeastern section of the United States. This represents 55 per cent of the total hydroelectric power today being generated in Alabama, Georgia, South Carolina, North Carolina, Tennessee and Kentucky. Assuming that transmission for 300 miles is feasible, power supplied at Muscle Shoals could be sent to nearly all sections of Alabama, Georgia, Tennessee, Kentucky and Mississippi and to large areas in Arkansas, Missouri, Southern Illinois and parts of North and South Carolina, Florida, Louisiana, Indiana and Virginia. It requires no special vividness of imagination to perceive that such additional power if made available at reasonable rates would

have a pronounced and beneficial effect upon the progress and welfare of this whole section. It is necessary to point out that this power would be sold to distributing companies which are already serving that area. These companies already have a rate base fixed by the state public service commissions. Under a contract made by the Muscle Shoals Corporation a lower rate would doubtless be fixed. In view of the impossibility of segregating in any given system the electrical current derived from private and public sources, the distributing companies which contracted with the Muscle Shoals Corporation would doubtless have to cancel other contracts and restrict themselves to government power. Nor is it difficult to see that this key power supply, if developed by the government or a public corporation, would admirably serve as a "yardstick" for all power projects in the region and thus indirectly help those agencies responsible for regulation in the public interest.

In this problem there is also involved the question of utilizing the existing machinery for the manufacture of fertilizer. This phase of the problem may be looked upon as of secondary importance since more economical methods of producing fertilizer have been perfected in the meantime. It will not be considered at this point. Nevertheless many of the proposals with reference to Muscle Shoals have included provisions for fertilizer manufacture.

This was to be the first step in the ultimate development of the entire Tennessee River system. The bill finally passed by both houses of Congress provided for the completion of the power project at Muscle Shoals proper. There was to be constituted a body corporate to be known as the Muscle Shoals Corporation of the United States. The board of directors of this corporation was to be composed of three members, not more than two of whom could be members of the same political party, to be appointed by the

President by and with the advice and consent of the Senate. The term of office of the directors was set at six years although the original appointments were to be for two years, four years and six years respectively. The directors were to be paid at the rate of \$50 per day for their services, with a maximum of \$7,500 for the first year and \$5,000 thereafter. The bill provided that the directors should be in no way connected with any power company or any fertilizer corporation. The chief executive of the corporation was to be a business manager selected by the board of directors and responsible to that body. He was to be appointed for a ten-year term but was to be removable for cause. Immediately subordinate to him and to be appointed by him with the advice and consent of the board were to be two assistant general managers. One of these was to be experienced in the production of fixed nitrogen and the other a man recognized as an expert in the production and distribution of hydroelectric power. Provision was made for employment of all necessary agents and subordinate officials.

This corporation was to be able to sue and be sued; to adopt and use a corporate seal; to make contracts; to adopt, amend and repeal by-laws; and to purchase, lease or hold property, to exercise the right of eminent domain, etc. It was authorized to make all necessary repairs and additions to the existing plants and structures to accomplish the purposes of the act. To it were to be entrusted all the properties owned by the government connected with the project and provision was made for the transfer to it of all properties of the government which could be directly utilized in the generation of power or the production of fertilizer.

The board was empowered to sell all surplus power not needed for the operation of the various structures connected with the fertilizer production to states, counties, municipalities, also to corporations, partnerships or individuals by

means of contracts for ten-year periods, preference being given to the former. Such power was to be distributed equitably among the states within transmission distance of Muscle Shoals. In order to facilitate the sale of power in an equitable manner the board was given authority to construct, lease or acquire transmission lines. In case any state, county, or municipality or any public or cooperative organization of citizens organized for the purpose of supplying electricity to citizens, but not for profit, should construct or agree to construct a transmission line to the plant, the board was authorized to contract for sale of power to such organizations for fifteen years. The surplus power not sold to public organizations such as the above could not be sold to private power corporations operating for a profit until they agreed to resell the power to the ultimate consumer at a rate not to exceed an amount "fixed as reasonable, just and fair by the Federal Power Commission." In case the rate charged should exceed that amount the contract should be declared null and void.

The net proceeds of the operation of the hydroelectric and fertilizer projects after deducting operating expenses, maintenance, depreciation and a certain amount to be reserved as operating capital, were to be paid into the treasury of the United States.

While this administrative organization was being set up, the Secretary of War was to have authority to complete the construction of dams and power units at Muscle Shoals. In addition, as a second unit in the development of the Tennessee, the Secretary of War was directed to construct or have constructed a dam across Clinch River in Tennessee popularly known as the Cove Creek Dam. With this structure was to be included an installation of hydroelectric equipment capable of furnishing 200,000 horsepower. This development was desirable not only to make available an



additional supply of power, but also to regulate the flow of the Tennessee River below the Cove Creek Dam so that the maximum amount of primary power might be developed at the dam at Muscle Shoals.

This is the law which would have provided this section of the country with a "measuring rod." It is clear that with a large supply of power available at reasonable rates comparative rate bases would be set up by which it would be possible to ascertain more easily than at present the value of the service rendered by private power companies. The bill proposed no power monopoly. It did not put government into business according to the popular conception. It merely provided that this all-important resource should be carefully guarded as public property and its development utilized to secure a supplementary form of control over the power industry in the southeastern section of the United States as well as a sorely needed supply of additional power.

#### BOULDER DAM

At the opposite corner of the country, on the Colorado River, there is the second great key center of publicly owned potential hydroelectric power with a possible capacity of 600,000 horsepower. This river rises in the states of Colorado and Wyoming and flows through Utah, Arizona, Nevada and California. These states, together with New Mexico, entered into an interstate compact for the distribution of the waters of this river. This compact has failed to produce any real results in so far as a development of the river is concerned from the points of view of power, irrigation, or flood control. The United States government was actively concerned in the interstate compact and directly involved in the question of the best solution because of the fact that the Colorado is an interstate and international stream. Some form of development must be undertaken

in order to protect fertile sections of the southern part of California in danger of being flooded at certain times of the year and to provide a necessary water supply to various portions of the Southwest both for irrigation and power uses. After extensive debate and political maneuvering a bill providing for this development passed both houses of Congress and was later signed by President Coolidge.<sup>2</sup>

This law cares for all phases of the problem presented. It provides that the dam and reservoir to be built shall be used: first, for river regulation, improvement of navigation and flood control; second, for irrigation and domestic uses . . . ; and third, for electric power. The bill authorizes the Secretary of the Interior to build a dam on the Colorado River at Black Canyon or Boulder Canyon which should be 550 feet high with a storage capacity of 26,000,000 acre-feet at an estimated cost of \$70,600,000. In addition a canal 75 miles long is authorized to connect Laguna Dam with the Imperial and Coschello valleys in California at a cost of \$39,200,000. The act provides for a power plant of 1,000,000 horsepower capacity at a cost of \$38,200,000. The total expenditures for the whole project including interest will be \$165,000,000. A scheme of financing was devised which in substance provides for an advance appropriation from the treasury to cover the necessary outlay with the idea that the revenue which accrues as a result of eventual operation of the projects will be returned to this fund and within fifty years the full amount shall be repaid including interest at the rate of 4 per cent.

The act cannot take effect until the states of Arizona, California, Colorado, Nevada, New Mexico, Utah and Wyoming have ratified the Colorado River compact or, in

<sup>2</sup> House of Representatives No. 5773—70th Congress, 1st Session. For detailed analysis of bill as introduced see Report of Committee on Irrigation and Reclamation with Minority reports of the same. House of Representatives Report No. 918, 70th Congress, 1st Session. Parts 1-3.

case of failure to ratify, the State of California through its legislature shall agree with the United States for the benefit of the other states not to use more than 4,400,000 acre-feet of waters of the Colorado, apportioned to the lower basin states and not more than one-half of the surplus waters.

Sale of electric energy is to be arranged by contract. Contracts are not to be for a longer term than fifty years and will be subject to revision at the end of fifteen years and every ten years thereafter. This readjustment may be upward or downward as to price as the Secretary of the Interior may find to be justified by competitive conditions at distributing points or competitive centers. Preference will be given as in the case of Muscle Shoals to the requirement of a state or a political subdivision.

The Secretary of the Interior is empowered to enter into contracts at his discretion under three options:

- (a) Power will be delivered at the switchboard, which would mean government built and operated power plants
- (b) The power plants built by the government will be leased to private companies
- (c) The water stored by the dam will be leased to a private company, which would mean privately built power plants.

Under the bill as passed by the House of Representatives in the long session of the Seventieth Congress, provision was made for the use of the contract to require rates which would be fair, just and reasonable. The law as passed gives to the Secretary of the Interior the right to prescribe rules and regulations which must conform with the Federal Water Power Act, as to rates, service, accounting, contracts, expropriation of profits, etc. The control of rates is granted to him in the absence of state regulation. The alterations

made by the Senate removed many of the vital provisions of the bill in so far as they were devised to safeguard the consumer.

The Boulder Dam project will constitute a measuring rod but the law as passed represents an economic and social philosophy so changed from the original bill that the value of this measuring rod is reduced to a minimum.

#### THE ST. LAWRENCE

There is no public power industry in New York State except in the limited production at Vischers Ferry and Crescent Dam and in some fifty-four small municipalities. The lower Niagara River and the St. Lawrence offer the main opportunity for developing such an industry should it be deemed advisable.

The St. Lawrence is the more important of the two and is one of the four great sources of primary power in the country. Located on an international boundary it is under the joint control of Canada and the United States. The power to be developed on the United States side comes under the joint control of the Federal Power Commission and the Water Power Control Commission of the State of New York. The question of a conflict of authority has been discussed in Chapter IV.

Within the next few years this great resource will probably be developed. It has a potential capacity of 2,500,000 horsepower, half of which will be available to New York State. Its development may be expected to have a considerable influence on the industrial growth of the northeastern section of the state as well as on parts of New England. No plan for its development can be undertaken until both the legislature and the governor of the state are agreed.

In 1926 the site was all but leased to a company representing the Aluminum Company of America, E. I. du Pont



de Nemours and Company and the General Electric. Much criticism of the leases was made on the ground that the public was not adequately protected. One of the main objections arose from the fact that the regulation of rates was to be turned over to the Public Service Commission, and a loophole was left by which it could base those rates on reproduction cost new, the same basis it now applies to the other utility companies of the state. Certain other terms of the license were not as stringent as those provided in the usual Federal Power Commission licenses, and it was felt that it would be socially disadvantageous to let such a large and important natural resource, one of the state's few remaining rights, go to a private company unless the public were more adequately protected.

The alternative to the proposed policy of leasing was a State Power Authority, similar to the proposal for a Muscle Shoals Corporation of the United States and to the successfully functioning Port of New York Authority. Such a corporation would have no stockholders and would derive its authority directly from the state to take over and develop the power resources of the state. Authority would be given to issue bonds secured, not by the credit of the state, but by the improvements to be made. This state water power authority would build dams and power houses by contract. It would generate power and then proceed to sell it at the cost of production plus sufficient to cover cost of operation, maintenance and depreciation and to amortize the debt on the plant.

Two plans for transmission could be developed. First—and it would probably be desirable—transmission lines could be built by the public corporations to carry the power to the distributing companies. These transmission lines would be in the nature of common carriers and power would be sold to any distributing company, municipal or private.

The state could then use the contract to fix the maximum rates at which the power would be sold to the consumer. There are in New York fifty-four municipal systems located for the most part in small villages and cities. Their costs of generation are high although in most cases their rates are low because of low capitalization, no profits, etc. These municipals would be eager to buy power at a low rate. Competitive distribution companies might be located in any city where conditions warranted and where authority to create such a company existed. This could be done in all home rule cities and in any city by action of the legislature. Thus if the private distributing company in a given city were charging unreasonable rates the municipality might threaten competition or actually compete on a favorable basis. The public development of the St. Lawrence would provide an effective "measuring rod" for the northeastern portion of the United States.

#### SUMMARY

These three governmentally owned and operated water power sites would be competitive only in a certain meaning of the word. They might be expected to develop power at a lower cost than is possible in most steam plants now operating. In the discussions of Boulder Dam, for example, the rate of 3 mills per kilowatt hour was used by the Secretary of the Interior as sufficient to amortize the cost of construction in twenty-five years. The power at Muscle Shoals has been selling, on the disadvantageous short-lease basis, at 2 mills. Even if the figure is finally established at 4 mills for these three plants it will be cheaper production than the most efficient steam plants can secure at present. This constitutes a saving of a fraction of a cent in generating costs. In case long high voltage transmission lines have to be built to the industrial centers that saving in cost will be

somewhat lowered. The main advantage of public development of these sites lies largely in the fact that they will not be subject to the large carrying charges which result from an inflated rate base. Their competition will lie in furnishing power to factories and towns on a basis that differs from the one which the privately owned utilities have been able to secure for themselves from the public service commissions. It is not expected that they will directly compete with private companies for present business, much of which is contracted for a long time in advance. They may, however, be expected to supplement the present supply of power, and when the present contracts between the factories and the privately owned utilities expire, will furnish power on a basis that precludes overcapitalization. Their influence will thus be persuasive rather than destructive. Their effective social function will be to show the private utilities that it is unwise for them to claim all that they can now obtain through the present weakness of the public service commissions, and to give the consuming public a thorough understanding of the extent to which the present system of regulation falls short of meeting the changed conditions in the power industry.

Our recommendations concerning the advantages of the public development of several strategically situated power plants, such as Muscle Shoals and Boulder Dam, were based on the assumption that the government would enter into contractual relations with private distributing companies and that such contracts would be determined by production, costs without profit, so far as the government is concerned and transmission and distribution costs with reasonable profits on the amount of prudent investment, so far as the distributing companies are concerned.

It is believed that power would be delivered to consumers

under such conditions at lower rates than those generally now in effect and that in view of the quantities involved and the location of the projects discussed such rates would serve as a norm for rate structures of private concerns in extensive areas of the country.



## CHAPTER IX

### CONTROL BY LEAGUE OF MUNICIPALITIES

IN THE Canadian Province of Ontario a league of municipalities has been operating an electrical system under public management for nearly twenty years. Because of its proximity to this country and the widespread propaganda against public ownership it has been made the target of an unbroken series of attacks that have aimed to discredit it in the eyes of the people of the United States. As a consequence there is a very general misconception on this side of the border concerning the character and success of the enterprise. This misconception, together with the design to describe various types of public control, has prompted the writers of this volume to devote a chapter to the Ontario undertaking, which is virtually a League of Municipalities supplying electricity at cost under the supervision and control of a special commission called the Hydro-Electric Power Commission of Ontario.

The chapter is divided into two parts, the first describing the organization and operation of the Ontario enterprise and the second comparing the costs to consumers and amounts of domestic consumption in Ontario and selected cities in New York State. In many ways the two areas are similar. In both are found interconnected systems covering extensive areas; both generate electricity on a large scale, and in each the technological equipment is of the latest and best design. There are, however, so many variable factors in the two situations that valid statistical comparisons become exceedingly difficult, particularly if one aims to reach a final conclusion as to the relative efficiency of public and private management. Accordingly, it is the purpose of the second part of this chapter not to

demonstrate the superiority of one type of operation over the other, but to show that in the matter of costs to consumers and amounts of domestic consumption, the Ontario system can easily hold its own with that in operation on this side of the border.

#### I. THE ONTARIO HYDRO-ELECTRIC POWER SYSTEM

##### *History and Administration*

The movement for the creation of a publicly owned system of electrical development in the Province of Ontario, Canada, began in 1900 when the Toronto Board of Trade made a report directing attention to the possibilities of securing an abundant supply of hydro-electrical energy from the Niagara River. At the same time citizens of other municipalities were studying the problem of low-cost electrical energy and were ready to cooperate on a suitable plan. Appeals were made to the Provincial Government for legislation and provision was made in 1903 for an investigating committee to work under the auspices of the interested municipalities. As a result, the Ontario Power Commission was appointed by the municipalities of Toronto, London, Brantford, Stratford, Woodstock, Ingersoll and Guelph. A comprehensive report was published in 1906.

In the same year the Provincial legislature created the Hydro-Electric Power Commission of Ontario. Further legislation was passed in 1907, extending the power of the commission. Under this later law municipalities desirous of supplying electrical energy to their citizens must make application to the commission. The earlier law had provided for the creation of separate commissions by interested municipalities. In 1908 thirteen municipalities authorized their officials to make contracts with the Com-

mission for a supply of electrical power from Niagara Falls.

The commission consists of three commissioners, two of whom may be members and one who shall be a member of the Provincial Cabinet. The commission has power to appoint its own engineers, officers and employees, subject in certain instances to the ratification by the Lieutenant Governor in council. The basic conception is a partnership of municipalities formed to obtain power at cost, each municipality paying its proportion of the cost for the service received and the whole to be administered as a unit by the Hydro-Electric Power Commission.

The generating stations and transmission lines are operated by the commission as a trustee for the partnership of municipalities and rural power districts. The capital required for the plant for the generation and transmission of power is loaned by the government at current interest rates upon receipt of formal requisition from the commission. The municipalities undertake to repay the money borrowed with interest over a period of thirty to forty years. The ultimate result of this plan is that the municipalities will, when the bonds are retired, own the generation and transmission systems free of encumbrance.

The commission also acts in an advisory capacity to the municipalities and renders services in connection with the purchase, construction and extension of distribution systems. It further assists the municipal officials in making their financial arrangements to pay for these systems. All rate adjustments are recommended by the commission after a careful study of the operating conditions in any given municipality. The commission is especially active in the smaller municipalities which are not of sufficient size to warrant the employment of a local manager with the necessary technical knowledge. Special engineering service is

given at cost whenever needed. The reports of the commission give a complete account of these engineering, supervisory and managerial activities. In these respects the commission performs services similar to those of the holding companies operating under private control in the United States. The commission carries on other work for the Government of the Province quite apart from its activities as trustee and administrator of the enterprise. Some of this, such as that performed in the Electrical Inspection service and in the laboratory are self-sustaining. From time to time the commission, at the request and expense of the Government, may, of course, engage in special activities which its staff is specially equipped to perform.

The local distribution of electrical energy within the borders of each municipality is under the administration of a public-utilities commission, appointed by the municipality under the provisions of the Public Utilities Act. If a city or town desires to obtain a supply of power from the commission a vote is taken at the polls. Authorization is thus given the municipal authorities to make a contract with the commission for the power required. The commission then proceeds with the building of the necessary transmission lines and substations. The local distributing system is financed by the issue of municipal debentures. Provision is made in the rates charged to the ultimate consumer for the retirement of these bonds in from twenty to thirty years.

According to the 1927 Report of the commission, the municipalities have now, in their local distribution systems, assets totalling \$81,792,678.34, while the municipal debentures outstanding amount to \$42,891,361.57. Amortization of debt has been accomplished to the extent of \$6,648,767.38 by actual principal payments on debentures, and \$6,398,909.77 by additional accumulation of sinking funds to meet



debentures maturing in the future.<sup>1</sup> The figures from year to year show the steady progress made so that the total debt may be amortized and future consumers will profit by the elimination of debt charges. At that time the people will own their own distribution systems free of encumbrance.

### *Development of Generation and Transmission Systems*

The Hydro did not build generating stations at first, but bought its power by contract from the Ontario Power Company. Transmission lines and transformer stations were constructed for the distribution of the purchased power. This system went into operation in 1910. The original contract provided for a maximum of 100,000 horsepower. This was reached in 1915 when arrangements were made for the purchase of additional energy. In August, 1917 the commission went a step further and purchased the plant of the Ontario Power Company, which had at that time a capacity of 160,000 horsepower.

In December, 1920 it acquired the Toronto Power Company with its plant capacity of over 125,000 horsepower. Anticipating the need for still greater facilities, the commission began the construction of the Queenston-Chippewa development on the Niagara River in 1917. Ten years later the commission was operating an aggregate of eight systems with a capital investment of \$286,164,745.18.<sup>2</sup> The total revenues of the undertaking in 1927 amounted to \$34,056,707.88. With new plants in process of development and additional power to be supplied under present

<sup>1</sup> The excess of assets over liabilities reflects, in addition to debt amortization, the extent to which local reserves have been laid aside and plant extensions and other investments have been made from surplus revenues. In addition to their local assets, the municipalities have acquired an equity in the commission's plant of \$10,143,205.66.

<sup>2</sup> See Table IV in Appendix.

contracts, the commission will have a total power supply of about 1,400,000 horsepower.

Of the eight systems, the Niagara is the largest and most important, generating 85 per cent of the total power produced. This system embraces the area lying between Niagara Falls, Hamilton and Toronto on the east and Windsor on the west. It serves 168 municipalities and townships and 79 rural power districts.

The other seven systems are so distributed that they comprise a network virtually covering the whole of the settled area of the Province.

The normal operating capacity of the hydro-electric generating stations on October 31, 1927, was 1,003,339 horsepower. To supplement this, 50,341 horsepower was purchased from private companies. Over half of the power purchased is used by the St. Lawrence and Ottawa systems, where the commission owns no generating stations. The commission is concerned with the generation and transmission of electrical energy and its sale to the municipalities as well as to sundry customers who are large users of power. The transmission lines operated at over 5,000 volts, total 3,350 miles. Of these 830 miles carry energy at 110,000 volts. Since that date, a 200 mile transmission line operating at 220,000 volts has been completed.

### *Rates*

The commission supplies power to the municipalities charging each municipality the actual cost. To do this an interim charge is made monthly. This is estimated largely on the basis of the business of preceding years. At the end of each year a credit or debit adjustment is made of the charges in order to make up the actual total cost.

The consumer pays the rate fixed by the commission for that municipality. The rates as set ordinarily result

in a moderate surplus, although in some municipalities small deficits have resulted in individual years. In 1927 the municipalities had an aggregate revenue from their retail consumers of \$24,583,022; the total of municipal surpluses was \$1,268,801, and the total of deficits was \$23,185. If the rates for any class of consumers in any municipality produce revenues materially greater or less than the cost, adjustment is ordinarily made in the rates for the following year. If the surplus in a municipality has been consistently greater than would accord with the principle of service at cost, a cash rebate is made to the consumers. These cash rebates to urban consumers in 1927 aggregated approximately \$350,000.<sup>3</sup>

The "cost of power" paid by the municipalities to the commission includes all the usual costs of overhead administration, of operation and maintenance of the generating, transforming and transmission plant and equipment and, in addition, the annual interest charges on the moneys borrowed for the initial cost of installation; it also provides for renewal and sinking-fund reserves as well as a special fund for contingencies.

Each municipality sells electrical energy to its own local consumers at rates approved by the commission. These rates cover the cost of distribution within the municipality, including retirement of the local debenture bonds, depreciation reserves and the cost of the power to be paid to the commission. The items entering into this cost were outlined above. Thus a rate in a given community covers not only costs of generation, transmission and distribution, but also amounts necessary to retire the bonds issued for plant construction. This last item is a feature of public operation not found in many private companies.

Under the Power Commission Act the commission is

<sup>3</sup> See 1927 Commission Report, page 224.

required to determine annually the actual cost of service to municipal corporations by the local commissions for such strictly municipal purposes as street lighting, the operation of waterworks, pumps and street railways. If any profit has accrued through the rates charged, the surplus is returned to the municipality.

In most of the systems of the Hydro a portion of the revenues comes from sources other than the municipalities forming those systems. These are listed as "sundry customers" or "private companies." They buy directly from the Hydro Commission and consist for the most part of all large power consumers. In 1927 this group paid \$5,456,140.42 to the commission, while the municipalities in the five systems considered <sup>4</sup> paid \$13,702,474.59.

The commission's report includes data from which the average rates charged these larger power users, listed as sundry customers, can be computed. It is also significant to note that the same bookkeeping system is used, so that the reserve for renewals and for obsolescence and contingencies is set up for these sales in exactly the same manner as in the case of the power delivered to the municipalities.

### *Rural Electrification*

The policy and practice of the commission have been and are to make the distribution of electrical energy as widespread as possible and to extend to every community that can be reached economically the benefit of electrical service. The first laws provided for distribution only to towns and cities. In order to supply rural residents the Act was amended, enabling the townships to obtain energy for distribution to rate-payers who petitioned for it. The

<sup>4</sup>The systems covered were: the Niagara, Georgian Bay, St. Lawrence, Rideau and Thunder Bay systems.



principal result of this amendment was to extend service to areas adjacent to towns and villages. The Act was again amended so as to form rural power districts in which service could be rendered to the more remote and less densely populated districts as well as in those more favorably situated.

For these lines the Provincial Government provides for grants-in-aid amounting to one-half the capital cost of the installation of rural transmission lines. This grant covers the cost of primary and secondary equipment. Such assistance is justified by the general policy of the government to promote the basic industry of agriculture. This is *the only subsidy of any type* which is granted by the Provincial Government to the commission or the municipalities operating under the commission. It applies only to *the initial capital investment*. Each rural power district pays the cost of operation, maintenance and administration and sets up reserves for renewals and obsolescences and a sinking fund on the investment made by the Commission. The whole rural electrification program may be regarded as primarily a matter of service because the demand for energy from the larger centers nearly absorbs the whole of the available supply.

Up to October 31, 1927, 2,862 miles of primary line had been built. These served 23,263 consumers in 122 rural power districts. The total capital investment in such lines is \$5,469,179.22, one-half of which was originally granted by the Provincial Government.

The rural power lines have been of the greatest value to agriculture in the Province. The electric energy is used for a variety of purposes in farm work, such as for operating water pumps, cream separators, milking machines, ensilage cutters, etc. In the farm home it has been of inestimable value in reducing the work of the housewife in a

variety of ways. Local industries such as brickyards, cheese and butter factories, flour mills, etc., have also been supplied with power and have increased in number. The rates for electrical energy in the rural areas were low even at the commencement of service, as shown by the table given below.

TABLE I

ESTIMATED COSTS OF ELECTRICAL SERVICE IN RURAL POWER DISTRICTS <sup>5</sup>

Description	Average Monthly Consumption	Total Estimated Annual Cost
	kw.hr.	
Hamlet service.....	15	\$ 27.54
Hamlet service.....	150	77.76
House lighting.....	15	32.40
Small farm service.....	35	54.54
Light farm service.....	40	70.74
Medium single-phase farm service.....	70	89.10
Medium three-phase farm service.....	70	99.90
Heavy farm service, single phase.....	150	152.60
Heavy farm service, three phase.....	150	162.86
Special farm service, single phase.....	300	250.56
Special farm service, three phase.....	300	275.40

NOTE: The annual costs here shown are based on the standard service charges for the several classes of service. It should be fully understood that the service is at cost. The above table is designed to represent initial standard conditions and therefore usually represents the maximum rates for any district to which energy could economically be transmitted under the specified condition that there must be at least three farm contracts per mile or their equivalent.

Furthermore according to the commission's Annual Report for 1927, in more than half of the rural power districts, the service charges have already been reduced below the standard service charge for initial operation, on which the above table is based.<sup>6</sup> The reductions vary from about five per cent to more than fifty per cent, averaging about 20 per cent. Despite these reductions in rates, the revenues from consumers in rural power districts,

<sup>5</sup> Frederick A. Gaby, *Canadian Electrical Development*, p. 12.

<sup>6</sup> 20th Annual Report, page 62 et seq.

aggregating \$1,032,000, yielded a net surplus over all costs of \$144,000.<sup>7</sup> In 1927, out of the surplus accumulated in certain rural power districts in previous years, the commission returned to the rural consumers some \$230,000 in cash.<sup>8</sup>

These rates reductions and rebates have been made possible, largely as a result of the increasing use of the service by the rural citizens. Growth in the utilization of electricity is promoted by the fact that, for all additional consumption beyond an amount specified for each class of consumer, the rural consumer pays only 1.8 cents net per kilowatt-hour—in some districts even less.

### *Summary*

In the foregoing pages a "thumb-nail sketch" has been given of the history, character and methods of operation of the Hydro enterprise in Ontario. In conclusion it may be stated that it is a public service institution organized by and for the municipalities under government supervision and with its cooperation. It supplies energy *at cost* and aims to serve the largest possible number of the citizens of the Province. It is in a sound financial position and apparently on the road to the ownership of its properties without encumbrances of any kind. Except for grants-in-aid for the extension of rural lines it enjoys no subsidies from the government in the form either of money, office space or other perquisites. Since only the real property of the commission is subject to direct taxation,<sup>9</sup> it does to some extent enjoy advantages over private enterprise in this respect. The situation may be summarized in the statement that the Ontario Hydro, including the municipalities, its constituent members, is a going concern that has demonstrated its ability to stand on its own feet.

The success of an electrical undertaking is determined in large part by the end sought. In the case of Ontario,

<sup>7</sup> Ibid., page IX.

<sup>8</sup> Ibid., page 59.

<sup>9</sup> Of the interest paid on the bonds issued to finance the undertaking, a portion accrues to the Dominion and municipal governments through the income tax. It has erroneously been assumed by some writers that these bonds were tax-exempt.

service is the objective, and the extent to which this has been secured may be determined by rates charged to the consumers. There are two methods of determining the reasonableness of rates; the first is to analyze all costs and the second to compare rates with those charged by other similar enterprises. The first would require the services of a large staff of engineers and accountants as well as access to the original accounts. This is an elaborate task that obviously goes beyond the scope of this inquiry. It was therefore decided to set up a comparison between several Ontario cities and comparable cities in New York State. This seemed particularly appropriate because the question of electrical rates in Ontario and the United States has been so frequently argued back and forth and it was hoped that, incidentally, some light might be thrown on the controversy.

## II. COMPARISON OF COSTS AND AVERAGE DOMESTIC CONSUMPTION

By way of introduction it should be stated that the original plan of this chapter called for a detailed analysis of costs, rates and other service conditions between representative municipalities in Ontario and selected operating companies in New York State. The following complicating factors made this difficult on the basis of available public reports and special studies.

1. In the first place Ontario is primarily a rural and relatively sparsely settled area, while New York is a highly industrialized and well-populated one. Such conditions are bound to affect averages of both costs and rates and to complicate in a very material way any comparison that may be attempted.

2. When the Hydro Commission began operations it had to do largely with a clean slate, that is, the electrical field



was only partially developed, so that a well-integrated scheme could be worked out and interconnections planned along most economical lines. But in New York considerable investments in plant and equipment had already been made before the process of consolidation, so necessary for cheap large-scale production, got under way. This involved a scrapping of plants and other equipment, the elimination of duplication both in generation and transmission, and other wastes that are incidental to a thoroughgoing reorganization of the industry. The consequence of this process has been a more or less permanent burden on the consumers, particularly in view of the policy of the Public Service Commission to give recognition to such original investment without due weight to the economies that may have been effected by consolidations.

3. Much of the power produced in New York is generated in steam plants, whereas Ontario derives almost all of its energy from water power.

4. Finally, the distances from the source of supply vary widely, thus increasing or decreasing the cost of transmission, as the case may be. This factor may be determined by topographical considerations that even under the best planned schemes give rise to such varied conditions in the two areas as to seriously impair whatever comparison is made.

Despite these complications it was believed at the outset of the investigation that by the use of average costs and revenues on the kilowatt-hour basis tenable conclusions might be drawn. This method has been widely adopted by economists and investigators who have represented both the public and private ownership points of view. Accordingly, an elaborate analysis was made of the available data for thirty-five cities in New York State and thirty-three cities in Ontario. The analysis was finally discarded, how-

ever, on the ground that the method is inherently unsound and frequently misleading. Because the average revenue per kilowatt-hour method of comparison had previously had general acceptance it seems pertinent to point out the reasons for considering it unreliable and the results that may be derived from its use, of little or no value.

#### A. THE AVERAGE REVENUE PER KILOWATT-HOUR METHOD OF COMPARING ELECTRIC RATES

Briefly stated, the average revenue per kilowatt-hour method of making rate comparisons consists in dividing the gross revenues received from the sales by the total amount of kilowatt hours of electrical energy consumed. The result is expressed as the average revenue or cost to the consumer—in cents—per kilowatt hour. This average has heretofore been generally considered to be a reliable index of the relative prices to the consumers and often of the managerial efficiencies of the undertakings in question.

At first glance the reasoning appears sound and the method convincing. A kilowatt hour is a unit of electrical energy. It is used to designate the amount of physical work done, whether it be for domestic consumption, commercial lighting, municipal street lighting, electric railway power or industrial power users. In the form of kilowatt hours electrical energy lends itself to convenient and accurate methods of measurement by means of meters. It therefore constitutes the unit or one of the units on which rates or charges to the consumers have been computed.

However, although the number of kilowatt hours of energy consumed is a factor in the payment for electrical service, it is universally recognized that factors other than the mere amount of energy consumed must be taken into consideration.

All rate schedules contain service classifications, not only with varying rates for electrical energy consumed under specified conditions, but in certain cases including special charges and discounts in an attempt to make the cost equitable to the consumer.

These schedules or rate forms may or may not be uniform in the cities or towns served by the same utility, and those for different utilities are seldom exactly alike. On account of their diversified and complicated nature, it is seldom practicable to effect a satisfactory comparison of the rate schedules themselves in two or more territories or for one utility with those of another.

The point that is ordinarily overlooked in applying the "average revenue per kilowatt hour" doctrine of rate comparison is the fact that the business of supplying electrical service is not simply producing and distributing kilowatt hours of energy. It is producing and distributing them under such varied service conditions that kilowatt hours of energy for domestic and commercial lighting and industrial power are not the same commodity, but practically different types of commodities.

The ordinary domestic consumer—though he uses a relatively small amount of energy—must properly pay something for the expense of equipment and service that makes it possible for him to have the energy any time he turns on the switch. In some rate schedules this is recognized by a "service charge," which is included in the monthly bill in addition to the price paid for energy consumed, and in other cases this expense is entirely reflected in the rates he pays. If enough domestic consumers desire to use electrical energy for cooking and water heating, a separate classification in the rate schedule may be included.

Consumers of electrical energy for commercial lighting include offices, retail stores and similar establishments. A

merchant, for example, has a certain number of lamps in his store and may put one or all into use, as he desires. The electric utility must stand ready with its equipment and services to supply instantly his full demand. Naturally his rates take this consideration into account and, in addition to the total energy consumed, the principal factor in determining his rate may be the total connected load in his establishment.

The service for municipal street lighting is usually specified for a limited period—as from dusk until dawn every night—and the rates are fixed at a definite unit charge for lamps of specified capacity.

The uses of electrical energy for certain industrial and commercial purposes impose conditions that are more complicated than for other uses. Among the factors affecting the rates in such cases are measured demand, consumption and power factor, together with such other considerations as intermittent or steady load, voltage and restrictions as to the hours or days of service.

This, in brief, describes the general types of consumers and the widely different service conditions under which electricity is and must be supplied to them.

In general, there are three main factors influencing the cost of supplying a kilowatt hour to a consumer. In the first place, other factors being equal, the greater the quantity of electrical energy consumed in a given period per consumer, the lower is the cost per kilowatt hour. In the second place, the higher the load factor of the consumer—that is, the more continuous the use of the power—the lower are interest and other fixed charges on the investment required to supply a given quantity of electrical energy, and the lower the cost per kilowatt hour of supplying the consumer. In the third place, the better the



diversity factor—that is, the smaller the degree of coincidence or overlapping of the maximum demands of the various consumers in a classification, or of one classification with the others—the higher the load factor on the plant, and the lower are the costs per kilowatt hour of supplying the consumer.

In other words not alone the quantity of electric units consumed, but also the periods of consumption and the relation of amount and time to the demands of other customers of the same and other classifications must be taken into account. All of these considerations properly affect the actual cost to the company of delivering the power to its customers.

The average revenue per kilowatt-hour method of rate comparison seems plausible because of the failure to recognize the fact that the service given by a “kilowatt hour” as applied to electric rates for one classification, such as domestic service, is in no sense the same as the service given by a “kilowatt hour” applied to rates for other classifications, such as commercial lighting or industrial power. This has an important bearing upon the fundamental conception of the “kilowatt hour” in connection with electrical energy rates. In such cases the “kilowatt hour” *per se* cannot be disassociated from such factors as service, demand, quantity and other elements which may influence the rate more than the actual amount of energy consumed. *The combining of revenues of all electric service classifications in one territory or for one utility and dividing by the sum of kilowatt hours sold, produces a jumble that is meaningless so far as effecting a comparison of the relative rates paid by the consumers is concerned.*

To make this point clearer, a simple analogy may be presented. Assume that two farmers, A and B, each sell

annually 1,000 head of live stock of equal quality as shown by Tables II and III, respectively:

TABLE II

Number and Kinds of Animals Sold per Year	Average Sale Price per Head	Total Revenue
100 cows at	\$60	\$ 6,000
200 pigs "	20	4,000
700 lambs "	10	7,000
1,000		\$17,000
Average revenue for Farmer A, \$17.00 per animal.		

TABLE III

Number and Kinds of Animals Sold per Year	Average Sale Price per Head	Total Revenue
300 cows at	\$50	\$15,000
200 pigs "	15	3,000
500 lambs "	8	4,000
1,000		\$22,000
Average revenue for Farmer B, \$22.00 per animal.		

As indicated by Tables II and III, Farmer A actually received a *higher* average unit price for each kind of animal sold, yet his average revenue per animal was \$5 less than that of Farmer B.

Certainly no one would seriously contend that such "average revenues per animal sold" would be of any value in deciding whether the prices paid for live stock were reasonable or were higher in one case than in the other; or, indeed, of any value in judging the relative efficiencies of

stock-farm management. Their use for such purposes is obviously worthless on account of the erroneous principle involved, yet the same erroneous principle is equally involved in using the "average revenue per kilowatt hour" as a unit of rate comparisons for electrical service.

The fact that animals are objects which are visible, definite and concrete, and "kilowatt hours" as used in connection with electric rates are of a less tangible nature in no way affects the analogy. If we think of kilowatt hours as animals in the preceding illustration, the fallacy of making a mixture of domestic, commercial lighting, industrial power and other kilowatt hours and revenues, becomes obvious, and the use of "average revenue per kilowatt hour" as a truly comparable measure of electric rates to the consumer becomes equally absurd.

It is, however, not necessary to go beyond the electric utility field for comparisons that illustrate this point. Reference may be made to the report of the New York State Public Service Commission for 1926, which contains the operating statistics of the various electrical utilities in the state.

The Buffalo General Electric Company reported total sales of 816,168,802 kilowatt hours for the net revenue of \$11,319,578, making the average net revenue 1.39 cents per kilowatt hour.

The Tonawanda Power Company reported 72,567,003 kilowatt hours sold for \$879,698, making the average net revenue 1.21 cents per kilowatt hour, or about 13 per cent less than the larger company, which had an output over ten times greater.

Now if the average revenue per kilowatt hour is a reliable index of relative rates, it would be fair to assume that the average rates of the Buffalo General Electric Company were higher than the Tonawanda Power Company. But

an inspection of the various accounts for each company, as reported, shows the average net revenue per kilowatt hour for the several classifications of service as follows:

TABLE IV

Classification	Average Net Revenue, Cents per Kw. hr.	
	Buffalo Gen. Electric Co.	Tonawanda Power Co.
Metered sales to general consumers—lighting.....	2.28	4.35
Metered sales to general consumers—power.....	.77	.90
Flat rate sales to general consumers.....	2.59	9.92
Railroad corporations.....	.58	.62
Municipal street lighting.....	4.31	5.06
Average from total sales.....	1.39	1.21

Thus, Table IV shows that, item for item, the average net revenue per kilowatt hour for each classification of service is higher for the Tonawanda Power Company as compared with the Buffalo General Electric Company, although with the total net average revenue exactly the opposite is the case.

This situation is explained by the fact that the amount of kilowatt hours sold in the classifications for the one utility are not proportionate to the same classifications in the other. The items are therefore weighted differently and a comparison of the total—as has been shown—is not even an index of comparative unit revenues for sales in the same classification, much less an indication of comparative rates to consumers.

As an illustration of the fact that even a high degree of comparability of conditions is not sufficient to eliminate



the fallacy of the method, let us assume that two territories, "X" and "Y," are to be compared in which the rates in the former are uniformly ten per cent lower than the latter. Thus, if the rates in territory "Y" range from 4.0 cents for small consumers to 0.4 cents for large consumers, the rates for "X" will range from 3.6 cents to 0.36 cents, respectively.

Let it be further assumed that for 90 per cent of the energy sold the conditions in the two territories are strictly comparable. Hence, if the average revenue per kilowatt hour for these comparable consumers in the case of territory "Y" is 1.50 cents for all classifications of service, the corresponding average revenue per kilowatt hour for similar sales of energy in territory "X" will be 10 per cent less or 1.35 cents per kilowatt hour.

But with reference to the other 10 per cent of energy sold it will be considered that the conditions are not comparable, but in territory "X" the energy goes to small consumers, and in territory "Y" to large consumers.

In Tables V and VI the sales and revenues for each 1,000 kilowatt hours sold in territories "X" and "Y" are set forth:

TABLE V

Territory "X"		
Comparable consumers.....	900 kw. hr.	at 1.35¢ = \$12.15
Non-comparable consumers.....	100 kw. hr.	" 3.6¢ = 3.60
	1,000 kw. hr.	\$15.75
Revenue for each 1,000 kw. hr., \$15.75		
Average revenue per kw. hr., 1.575 cents		

Appendix, Table VI.

TABLE VI

Territory "Y"		
Comparable consumers.....	900 kw. hr.	at 1.50¢ = \$13.50
Non-comparable consumers.....	100 kw. hr.	" .40¢ = .40
	<hr/> 1,000 kw. hr.	<hr/> \$13.90
Revenue for each 1,000 kw. hr., \$13.90		
Average revenue per kw. hr., 1.39 cents..		

In these tables it is to be noted that the "revenue per kilowatt hour" in territory "X" is about 11 per cent *higher* than that of territory "Y" despite the fact that all of its rates are 10 per cent *lower* than those of territory "Y." Therefore, a variation in the weights which affected only 10 per cent of the kilowatt hours being averaged is sufficient to not only overcome the differential of 10 per cent in the rates themselves, but also to indicate a differential of about 11 per cent in the opposite direction.

An effort to compare rates from average revenues per kilowatt hour can therefore lead to conclusions directly contrary to the truth even when 90 per cent—a large amount—of the energy is sold under conditions that are exactly comparable.

It can also be demonstrated that the method is erroneous even where individual classifications of service are concerned.

In the annual reports of the Ontario Hydro-Electric Power Commission of Ontario, electrical energy for domestic, commercial lighting and power users are reported separately. The 1926 Ontario report indicates that the average commercial customer used about two and one-half times as much energy as the average domestic customer; also that he paid 34 per cent more per kilowatt hour.

Superficially considered, it might appear that one cus-

tomers is being discriminated against in favor of the other, especially since it is generally agreed that, with all other factors equal, the price of electrical energy decreases with the volume consumed. This is a situation in which one may readily be led astray by the average revenue per kilowatt hour theory of rate comparison.

Consider the city of St. Thomas in Ontario as a specific case. The report for 1927 states that for domestic service the average monthly consumption was 105 kilowatt hours and the average net cost for the same was 1.6 cents per kilowatt hour. For commercial lighting service the average monthly consumption was 273 kilowatt hours, with 1.9 cents per kilowatt hour as the average unit price. It will be noted that the commercial consumer used on the average more than two and a half times as much energy per consumer per month as the domestic consumer. If the figures of the average revenue per kilowatt hour were indicative of the average rates, one would be justified in reaching the conclusion that the rates were not based upon actual costs. However, reference to the rate schedule for St. Thomas reveals that if a customer in that city takes his electrical energy under the same conditions as a commercial lighting customer—i. e., solely or principally for lighting—he must pay more per kilowatt hour than does the commercial customer.

A domestic customer using electrical energy for lighting only would probably consume 30 kilowatt hours per month, and the charge for this service in St. Thomas would be \$0.84 or 2.8 cents per kilowatt hour. An average commercial consumer with a connected load of 2,000 watts and monthly consumption of 270 kilowatt hours would pay \$5.13 or 1.9 cents per kilowatt hour. That is, the cost per kilowatt hour to the average domestic lighting consumer in St. Thomas is more than 50 per cent higher than to the average com-

*Victoria  
Public Utilities Act  
Comparison of rates  
between public & private*

mercial lighting consumer. This accurately reflects the higher cost of serving the energy in smaller quantities.

The explanation as to why general domestic revenues per kilowatt hour are lower than commercial lighting revenues is found in the fact that electrical appliances are used by the domestic consumers in Ontario municipalities to a much greater extent than in other territories, and that, as compared to lighting service, the use of appliances

TABLE VII <sup>10</sup>

Year 1922	Private Plants	Municipal Plants
<i>Electric Energy</i>		
<i>Sales Kw. Hr.</i>		
Light .....	8,483,425,201	1,293,689,307
Power.....	17,918,135,238	695,251,755
Light and power combined.....	26,401,560,439	1,988,941,062
<i>Electric Revenue</i>		
Light .....	\$493,582,491	\$68,614,218
Power.....	320,947,792	13,839,737
Light and power combined.....	\$814,530,283	\$82,453,955
<i>Average Revenue per kw.hr.</i>		
Light .....	5.8182 cents	5.3038 cents
Power.....	1.7912 cents	1.9906 cents
Light and power combined.....	3.0841 cents	4.1457 cents
<i>Taxes.....</i>	\$73,128,440	\$644,484
<i>Average Revenue per kw. hr. less taxes</i>		
Light .....	5.3642 cents	5.2590 cents
Power.....	1.6516 cents	1.9753 cents
Light and power combined.....	2.8434 cents	4.1137 cents

<sup>10</sup> *Electric Light and Power Rates in the United States*, p. 4.



involves more favorable conditions in regard to both load factor and diversity factor. Domestic appliance consumption in Ontario municipalities is about twice as great as domestic lighting consumption. This is an adequate explanation of a seeming anomaly.

Still another example of the gross errors which the method gives rise to is afforded by a comparison in a recent report—September, 1928—of the Rate Research Committee of the National Electric Light Association, concerning the operation of privately owned and municipally owned plants in the United States. Among other things it compares average revenue per kilowatt hour for both light and power erroneously assuming such data to be criteria of average rates.

On the basis of these data it is stated in the report: "had the light and power customers of the municipal plants paid for their energy at the average rate of the private companies, they would have saved some \$25,900,407 out of a total of \$82,453,955."

The mathematical process by which this result was reached is as follows:

TABLE VIII <sup>11</sup>

<hr/>			
Electric revenue for light and power combined (municipal plants).....			\$82,453,955
Revenue from total energy sold for light and power by municipal plants on basis of average revenue per kw. hr. from private plants.....	1,988,941,062	at 2.8434¢....	56,553,550
			<hr/>
Total alleged "saving".....			\$25,900,405
<hr/>			

From Table VII it will be observed that the average revenues per kilowatt hour for light are 5.8182 and 5.3038

<sup>11</sup> *Electric Light Power Rates in the United States*, p. 4.

cents, respectively, for private and for municipal plants.

Now, since the latter is less than the former, it is apparent that no part of the alleged "saving" could have been made by charging the light customers of municipal plants at the light rate charged the customers of private plants.

The total revenue from municipal power customers was only \$13,839,737, therefore it is obviously impossible to effect a saving of nearly \$26,000,000 from this item. The claim of such a saving is preposterous and constitutes a striking illustration of the magnitude of the errors that may arise when average revenues are considered or employed as though they were average rates.

Had the customers of the municipal plants paid for electrical energy for light and power on the basis of average revenues per kilowatt hour for light and power, *respectively*, as paid by consumers of private plants, the result would have been as follows:

TABLE IX

<i>Kilowatt hours of Electrical Energy</i>	
Light.....	1,293,689,307 kw. hr. at 5.8182¢ = \$75,269,431
Power.....	695,251,755 " " " 1.7912¢ = 12,453,349
<hr/>	
Revenue to municipal plants on basis of average revenues from private plants.....	\$87,722,780
Amount actually paid.....	\$2,453,955
<hr/>	
Increased cost under private ownership to customers of municipal plants.....	\$ 5,268,825
<hr/>	

Thus, instead of saving the customers of the municipal plants nearly \$26,000,000 by charging them at the rates of the private companies, Table IX indicates that on the basis of the N. E. L. A. data the customers of the municipal

plants would actually have paid over \$5,000,000 *more*.

In order to make the comparison complete, Table X indicates what the consumers of the private plants would have paid for light and power on the basis of average revenues per kilowatt hour for light and power, respectively, as paid by the consumers of the municipal plants.

TABLE X

<i>Kilowatt hours of Electrical Energy</i>	
Light.....	8,483,425,201 kw. hr. at 5.3038¢ = \$449,943,906
Power.....	17,918,135,238 " " " 1.9906¢ = 356,678,400
<hr/>	
Revenue to private plants on basis of average revenues from municipal plants.....	\$806,622,306
Amount actually paid.....	814,530,283
<hr/>	
Decrease to private plant consumers if under municipal opera- tion.....	\$ 7,907,977

That is to say, the consumers of the private plants would have paid about \$8,000,000 *less* for light and power if they had been charged on the basis of the average kilowatt hour revenues as listed in the N. E. L. A. report for light and power consumers of the municipal plants.

The above comparisons clearly demonstrate that it is possible to arrive at conclusions by the use of kilowatt hour averages, which run directly counter to basic facts.

The underlying fallacies are either that the physical unit of measurement of electrical *energy*, the kilowatt hour, is a dependable and uniform measurement of electrical *service* under all typical conditions, or that, although the amount of service associated with a kilowatt hour is greatly different under one set of circumstances from that under another set of circumstances, these differences will be eliminated to all practical intents and purposes by the averaging process. That neither of these assumptions is

tenable has been conclusively shown. From the viewpoint of cost, rate and managerial efficiency, the service rendered by a kilowatt hour at dawn differs from that by one at sunset; the service rendered by a kilowatt hour in the street differs from that by one in the factory or in the house; the service rendered by a kilowatt hour in an industrial city differs from that by one in a hamlet. Even with a high degree of comparability of conditions—higher than is ordinarily found in comparing one electrical utility with another—comparison of average revenues per kilowatt hour may give a result which, if interpreted as a comparison of rates, is the reverse of the truth. Until some method is devised for weighting these variables so that a kilowatt hour becomes simply a kilowatt hour, the averaging process will lead to faulty conclusions that on closer analysis may be proved to be untenable.

#### B. COMPARISON OF MONTHLY BILLS

When the authors reached the conclusion that it was unsound to compare electric rates on the basis of average revenues per kilowatt hour, their attention was directed to other methods of comparison. The chief difficulties involved in comparing one rate schedule itself with another have already been pointed out and explain why this plan was not undertaken. It was finally decided to adopt the simple and direct method of comparing monthly bills for corresponding and comparable services.

For this purpose a set of specifications was drawn up for eleven cases involving conditions that could fairly be considered representative in the areas compared. This included one example of ordinary domestic consumption and one of domestic consumption with electric range for cooking, etc., four examples of small and large commercial lighting and five typical cases of small and large industrial



power users. These cover the whole field in which purchasers of electrical energy are chiefly interested. Despite the precise character of the above specifications it was found impossible in the case of certain cities to compute all of the costs on the basis of the information furnished. This accounts for the omissions in the tables. In a few other instances it was necessary for the computer to make certain assumptions with reference to demand or other operating conditions.<sup>12</sup> While different assumptions—even with the same rate schedule—would result in somewhat different costs, it is believed that reasonable assumptions for the particular localities were adopted so that the costs may be considered typical for the municipalities. Even though subject to some variation, the final results would be affected by no more than ten or fifteen per cent.

However, the eleven cases are not uniformly representative in both Ontario and New York cities because of different industrial and other conditions. For instance, an important group of small users of electricity for industrial purposes<sup>13</sup> has a separate schedule in Ontario, whereas such consumers are often charged at lighting rates in New York. This same distinction holds with reference to commercial lighting customers. Ontario provides separate rate schedules for this group, and in many instances New York cities do not.

Again, consumers purchasing as much as 288,000 kilowatt hours per month<sup>14</sup> are not typical either of the Ontario or the smaller New York State municipalities. There are none whatever in Geneva, New York, nor in the Ottawa system in Ontario, for instance. These costs were included, however, in order to show that these data—even though

<sup>12</sup> Such assumptions as were noted on the returns are listed in the Appendix, Table II.

<sup>13</sup> See cases 7 and 8 in Table V in Appendix.

<sup>14</sup> See case 11 in Table V in Appendix.

unusual, are in conformity with the other cases of industrial power.

With the above reservations we may now proceed with the forms of bills that were used. Two samples are given below. The whole series appears in Table V in the Appendix.

*Case 1*

An ordinary domestic consumer using 36 kilowatt hours per month. The permanently connected load is 1 kw. Cooking and water heating not included. House of six rooms with a floor area of 1,400 sq. ft. exclusive of unused basement and attic.

Cost \$.....

*Case 9*

An industrial consumer using electrical energy as follows:  
Monthly energy consumed.....21,600 kw. hr.  
Measured Demand..... 100 kw.  
Power factor..... 85 per cent.  
Voltage..... 4,000  
Continuous load. No restrictions as to hours or months of use.

Cost \$.....

It will be noted that the monthly bills are set up in such a way that they provide for all the essential features of service, including amount of energy consumed, demand and consumer charges, etc. Because the same service is involved in all particulars for each comparison, the results are a true index of the relative rates or prices from the standpoint of the consumer.

On the basis of these specifications the costs were computed for eighteen representative cities in New York State and eight in Canada according to rate schedules prevailing in March, 1929. The list of cities and population is given in Table XI. Of the eight Canadian cities six are in Ontario and two are in the Province of Quebec. The former operate

under the public system described above, while the latter are under private control. It should be noted that the course followed in selecting the Ontario cities used in the comparisons was not to pick out those cities where the rates are lowest, but rather to give what the authors regarded as a representative selection. With respect to industrial power rates, for example, the commission's Report for 1927 lists the "Basis of rate," which is a general guide to the relative charges for industrial service in the various municipalities. There were eight municipalities in Ontario where the basis of industrial rates is lower than that of any of the cities used for comparison. In one city, Guelph, the basis of rate is 20 per cent lower than that of the lowest of the cities for which costs to the consumer were calculated. The list of selected cities appears below, arranged in the order of size:

TABLE XI

Cities	Population
New York State	
Buffalo.....	550,000
Rochester.....	324,500
Syracuse.....	197,000
Albany.....	119,500
Yonkers.....	118,800
Schenectady.....	93,200
Binghamton.....	73,900
Niagara Falls.....	66,600
Jamestown.....	45,100
Poughkeepsie.....	35,900
Auburn.....	35,700
Watertown.....	33,400
Rome.....	31,100
Lockport.....	21,700
Ithaca.....	19,300
Glens Falls.....	18,100
North Tonawanda.....	17,700
Geneva.....	16,200

## ELECTRICAL UTILITIES

## Canada

Toronto, Province of Ontario.....	569,899
Hamilton " " " .....	123,359
Ottawa " " " .....	122,731
London " " " .....	64,293
Kitchener " " " .....	25,856
Niagara Falls " " " .....	18,492
Montreal, Province of Quebec.....	989,835
Quebec " " " .....	131,071

Population of New York State cities is based on Bureau of Census for 1928.

Population in Canadian cities is taken from municipal reports:

Ottawa (1928), Montreal, Toronto, and Quebec (1927); others (1926).

The data for the eleven cases for the cities in the above list were compiled through the cooperation of the electric utilities in New York State and Canada and supplemented by reference to schedules filed with the New York State Public Service Commission at Albany. In the accompanying table the cities are arranged in the order of lowest to highest costs for each of the eleven cases.



TABLE XII

CITIES IN NEW YORK STATE AND CANADA ARRANGED FOR EACH CASE IN THE ORDER OF LOWEST TO HIGHEST COSTS  
CASE NUMBERS

Domestic Consumers			Commercial			Consumers	
Case 1	Case 2	Case 3	Case 4	Case 5	Case 6		
Hamilton <sup>1</sup>	\$ .95	Ottawa <sup>1</sup>	\$1.93	Hamilton <sup>1</sup>	\$16.16	Hamilton <sup>1</sup>	
Kitchener <sup>1</sup>	.95	Niagara Falls <sup>1</sup>	2.33	Niagara Falls <sup>1</sup>	18.45	Niagara Falls <sup>1</sup>	
London <sup>1</sup>	.95	Toronto <sup>1</sup>	2.33	Kitchener <sup>1</sup>	19.69	Ottawa <sup>1</sup>	
Niagara Falls <sup>1</sup>	1.03	London <sup>1</sup>	2.67	London <sup>1</sup>	19.69	Niagara Falls	
Ottawa <sup>1</sup>	1.03	Hamilton <sup>1</sup>	2.71	Ottawa <sup>1</sup>	23.06	Kitchener <sup>1</sup>	
Toronto <sup>1</sup>	1.03	Kitchener <sup>1</sup>	2.97	Lockport	26.25	London <sup>1</sup>	
Montreal <sup>2</sup>	1.17	Quebec <sup>2</sup>	3.13	Toronto <sup>1</sup>	27.45	Lockport	
Buffalo	1.59	N. Tonawanda	4.85	Jamestown	28.35	Niagara Falls	
Jamestown	1.62	Buffalo	5.01	Montreal <sup>2</sup>	32.50	Buffalo	
Niagara Falls	1.64	Lockport	5.30	Buffalo	34.13	Toronto <sup>1</sup>	
Syracuse	1.98	Niagara Falls	5.55	N. Tonawanda	34.22	Jamestown	
Quebec <sup>2</sup>	1.98	Montreal <sup>2</sup>	5.69	Auburn	42.00	N. Tonawanda	
N. Tonawanda	2.07	Jamestown	6.08	Geneva	42.00	Geneva	
Albany	2.43	Syracuse	6.15	Rochester	42.25	Auburn	
Schenectady	2.43	Albany	6.60	Rochester	43.00	Rochester	
Lockport	2.52	Schenectady	6.60	Syracuse	43.00	Syracuse	
Rochester	2.69	Binghamton	7.65	Niagara Falls	43.00	Watertown	
Poughkeepsie	2.80	Poughkeepsie	7.96	Quebec <sup>2</sup>	50.00	Binghamton	
Binghamton	2.84	Watertown	8.40	Schenectady	54.00	Quebec <sup>2</sup>	
Watertown	2.88	Rome	8.56	Watertown	58.00	Poughkeepsie	
Rome	3.00	Ithaca	8.87	Binghamton	60.00	Yonkers	
Glens Falls	3.24	Auburn	9.00	Rome	63.00	Ithaca	
Ithaca	3.31	Geneva	9.00	Albany	65.00	Yonkers	
Auburn	3.44	Rochester	9.75	Poughkeepsie	67.00		
Geneva	3.44	Yonkers	15.00	Glens Falls	68.40		
Yonkers	3.60	Glens Falls		Ithaca	69.19		
		Yonkers		Yonkers	73.00		

<sup>1</sup> Province of Ontario. <sup>2</sup> Province of Quebec.

All other cities in New York State.



The foregoing compilation shows that the Ontario cities are uniformly in the upper range of positions as compared either with the two Quebec or the group of New York State municipalities as a group. This is the more striking when the lowest, the next to the lowest, and the highest and the next to the highest cost cities are segregated in a

TABLE XIII

LIST OF CITIES IN NEW YORK STATE AND CANADA HAVING LOWEST AND HIGHEST COSTS FOR ELECTRICAL SERVICES

	Case	Lowest Cost	Next to Lowest	Next to Highest	Highest Cost
Domestic	1	Hamilton <sup>1</sup> Kitchener <sup>1</sup> London <sup>1</sup>	Niagara Falls <sup>1</sup> Ottawa <sup>1</sup> Toronto <sup>1</sup>	Auburn Geneva	Yonkers
	2	Ottawa <sup>1</sup>	Niagara Falls <sup>1</sup> Toronto <sup>1</sup>	Rochester	Yonkers
Commercial	3	Hamilton <sup>1</sup>	Niagara Falls <sup>1</sup>	Rome Yonkers	Glens Falls
	4	Hamilton <sup>1</sup>	Niagara Falls <sup>1</sup>	Ithaca	Yonkers
	5	Hamilton <sup>1</sup>	Niagara Falls <sup>1</sup>	Yonkers	Ithaca
	6	Hamilton <sup>1</sup>	Niagara Falls <sup>1</sup>	Quebec <sup>2</sup>	Yonkers
Industrial	7	Kitchener <sup>1</sup>	Ottawa <sup>1</sup>	Ithaca	Yonkers
	8	Ottawa <sup>1</sup>	Hamilton <sup>1</sup>	Ithaca	Yonkers
	9	Buffalo	Niagara Falls	Glens Falls	Yonkers
	10	Buffalo	Niagara Falls	Poughkeepsie	Yonkers
	11	Niagara Falls	Buffalo	Yonkers	Poughkeepsie

<sup>1</sup> Cities in Province of Ontario, Canada.

<sup>2</sup> Cities in Province of Quebec, Canada.

All others in New York State.

separate table. Buffalo and Niagara Falls are the only New York cities that appear in the lowest or next to the lowest series, while the next to highest and highest series are made up largely of the cities in the eastern part of the state—i.e., such as are not supplied with Niagara power.

A similar table was set up for the Ontario and Quebec municipalities. This was suggested because of the repeated

TABLE XIV

LIST OF CITIES IN CANADA HAVING LOWEST AND HIGHEST COSTS FOR ELECTRICAL SERVICE

	Case	Lowest Cost	Next to Lowest	Next to Highest	Highest Cost
Domestic	1	Hamilton <sup>1</sup> Kitchener <sup>1</sup> London <sup>1</sup>	Niagara Falls <sup>1</sup> Ottawa <sup>1</sup> Toronto <sup>1</sup>	Montreal <sup>2</sup>	Quebec <sup>2</sup>
	2	Ottawa <sup>1</sup>	Niagara Falls <sup>1</sup> Toronto <sup>1</sup>	Quebec <sup>2</sup>	Montreal <sup>2</sup>
Commercial	3	Hamilton <sup>1</sup>	Niagara Falls <sup>1</sup>	Montreal <sup>2</sup>	Quebec <sup>2</sup>
	4	Hamilton <sup>1</sup>	Niagara Falls <sup>1</sup>	Montreal <sup>2</sup>	Quebec <sup>2</sup>
	5	Hamilton <sup>1</sup>	Niagara Falls <sup>1</sup>		
	6	Hamilton <sup>1</sup>	Niagara Falls <sup>1</sup>		
Industrial	7	Kitchener <sup>1</sup>	Ottawa <sup>1</sup>	Quebec <sup>2</sup>	Montreal <sup>2</sup>
	8	Ottawa <sup>1</sup>	Hamilton <sup>1</sup>	Quebec <sup>2</sup>	Montreal <sup>2</sup>
	9	Ottawa <sup>1</sup>	Kitchener <sup>1</sup>	Montreal <sup>2</sup>	Quebec <sup>2</sup>
	10	Ottawa <sup>1</sup>	Hamilton <sup>1</sup>	Montreal <sup>2</sup>	Quebec <sup>2</sup>
	11	Ottawa <sup>1</sup>	Hamilton <sup>1</sup>	Montreal <sup>2</sup>	Quebec <sup>2</sup>

<sup>1</sup> Cities in Province of Ontario, Canada.

<sup>2</sup> Cities in Province of Quebec, Canada.



statement that the privately operated companies in Quebec are delivering power at lower costs than the publicly operated Hydro units. Such a situation does not appear to exist.

In order to bring out the difference between comparable cities in the two territories, special tables are presented for Toronto and Buffalo and for Toronto, Hamilton, Rochester and Syracuse. All of these cities derive their electrical power from Niagara Falls and all are situated within a relatively short radius of the source of supply.

TABLE XV  
COMPARISON OF COSTS IN BUFFALO, N. Y., AND TORONTO, ONTARIO

	CASE NUMBERS										
	Domestic		Commercial				Industrial				
	1	2	3	4	5	6	7	8	9	10	11
Buffalo..	\$1.59	\$5.01	\$6.83	\$34.13	\$60.50	\$101.00	\$35.00	\$95.45	\$212.91	\$665.31	\$2379.75
Toronto..	1.03	2.33	5.49	27.45	64.80	117.00	28.04	94.01	252.57	790.36	2752.67

The above figures show that the costs for domestic and the smaller quantities of commercial and industrial energy are lower in Toronto, while Buffalo consumers pay less for the larger amounts under the commercial and industrial brackets. In considering these data some weight must be attached to the more favorable location of Buffalo with reference to its source of supply. As Toronto is sixty-two miles farther from Niagara Falls than Buffalo, capital investment in transmission lines and equipment will be a more considerable factor in Toronto than Buffalo. This will partially explain the differential for cases 6, 9, 10 and 11 in favor of Buffalo.

In the following table the figures are brought together for Toronto, Hamilton, Rochester and Syracuse:

TABLE XVI  
COMPARISON OF COSTS BETWEEN ROCHESTER AND SYRACUSE, N. Y., WITH  
HAMILTON AND TORONTO IN ONTARIO  
CASE NUMBERS

	Domestic		Commercial				Industrial				
	1	2	3	4	5	6	7	8	9	10	11
Rochester.....	2.69	9.75	9.10	42.24	94.50	156.00	42.00	208.25	497.23	1250.58	4051.75
Syracuse.....	1.98	6.15	11.51	43.00	98.00	163.00	73.01	220.00	424.92	1110.47	3627.00
Hamilton.....	.95	2.71	3.24	16.16	35.44	62.22	23.19	73.87	234.94	716.56	2427.64
Toronto.....	1.03	2.33	5.49	27.45	64.80	117.00	28.04	94.01	252.57	790.36	2752.67

As the preceding comparison gave an advantage to Buffalo, so this one is favorable to the Ontario cities from the viewpoint of population and distance from the place of generation. These factors, however, do not fully explain the wide divergencies in costs to consumers for equal service in the two areas. These charges to consumers from the first to the last case are uniformly lower in the Ontario cities, and in most cases to a very marked degree.

In the following tabulation, average costs are brought together in various sections of New York State and Ontario, the cities being arranged in groups according to location. Omitting Ottawa, the five Ontario cities in the Niagara system comprise one set; on the New York State side, Buffalo, Niagara Falls, North Tonawanda, Jamestown, and Lockport are designated the "Western New York" group; Rochester, Auburn and Syracuse as "Upstate-West"; Rome, Glens Falls and Schenectady as "Upstate-East." The "Lower Hudson" group includes Albany, Poughkeepsie and Yonkers.

In order to facilitate comparison, the average costs in

each group have been expressed as ratios, with the Ontario average cost for each case expressed as unity (1.00). These results are presented in Table XVII. The ratios shown in this table clearly indicate the relation between the costs in various sections of New York State with Ontario. It also establishes the fact that there is a trend in the increase of costs in the State of New York from Buffalo to the east and south towards New York City.

TABLE XVII

COMPARISON OF COST RATIOS IN GROUPS OF CITIES IN NEW YORK STATE  
WITH ONTARIO

On a basis of Ontario taken as 1.00

	CASE NUMBERS										
	Domestic		Commercial				Industrial				
	1	2	3	4	5	6	7	8	9	10	11
Ontario.....	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Western New York..	1.93	2.06	2.06	1.63	1.38	1.34	1.60	1.62	1.07	1.03	1.00
Upstate-West.....	2.76	3.19	2.51	2.09	1.93	1.76	2.37	2.55	1.88	1.63	1.61
Upstate-East.....	2.95	2.92	4.10	3.05			2.44	2.74	1.82	1.74	1.76
Lower Hudson.....	3.00	3.79	3.90	3.37	3.13	3.29	3.58	3.96	2.69	2.34	1.91

Cost of ordinary domestic service in New York State is seen to vary from about two to three times as much as in Ontario. It has already been mentioned that large power consumers in Buffalo and Niagara Falls, N. Y., have lower costs than the cities across the border, but large power users in the other New York State groups pay from 60 to 170 per cent more than in Ontario. Large commercial users in the New York State groups pay from about 40 per cent to over three times more than the costs for similar service in the Ontario group of cities.

The advantage in lower costs to the small commercial and industrial power users in Ontario as contrasted with those in New York State cities is even more conspicuous. The New York State costs for such service are seen to vary from about one and a half to four times as much as on the Ontario side.

### *Summary*

It is believed that the method of comparing costs for identical quantities of power supplied under as nearly identical service conditions as could be specified has led to a body of data that is both fair and reliable. Consideration of these data warrants the deduction that the Ontario municipalities are on the whole enjoying more favorable rates for electrical power than selected cities in New York State which are served by private companies. This applies to all types of power with the exception of large users of electricity for commercial and industrial purposes in Buffalo and Niagara Falls, N. Y. When averages are considered there is but one exception to the above statement. This refers to the largest industrial consumer (Case 11) for which the average cost for the Western New York group was practically identical with the average cost of the Ontario group of cities.

A further conclusion is that there seems to be no sound basis for the repeated contention that large industrial consumers are penalized in Ontario by subsidizing small users, at least to such an extent that the practice brings their costs above the average that is paid in New York cities.

Finally, it has been frequently urged that the privately operated systems in Quebec are delivering power at lower figures than in Ontario. The data submitted above do not bear out this statement.

In so far as comparative costs are an index to the mana-



gerial efficiency of an enterprise, the tables submitted above go to show that the Ontario Hydro Commission has nothing to fear from this test.

#### C. AVERAGE COSTS AND CONSUMPTION OF DOMESTIC CONSUMERS

From the point of view of public service an important test for the management of an electrical utility company is the rate schedule for domestic service and the use of electrical current in the home. In support of this it may be pointed out that the domestic class exceeds in number of consumers every other class by a large percentage; that nearly one-half of the revenues of the typical company is derived from domestic users; and that in revisions of the rate policy domestic rates are likely to be the last to be reduced. For these reasons a comparison is made between approximately the same number of domestic consumers in selected Ontario and New York State cities along the following lines: average monthly bill, average amount consumed per family per month and average cost per kilowatt hour. It should be noted that there are fewer variables involved in giving service to households than in either the commercial or industrial power field. But even here conditions may differ to such an extent that the most carefully compiled data can lead to only qualified conclusions.

The reports of the electrical companies to the Public Service Commission in New York and the Hydro-Electric Power Commission in Ontario provide material for a comparison of the actual amounts paid by domestic consumers as well as the average number of kilowatt hours used.

The New York reports, however, usually combine such data for domestic and commercial lighting customers, but in five cases the domestic sales were segregated in the 1926 report, thus providing the information necessary for the

comparison. The following table is based on the returns (1) from four New York companies<sup>15</sup> which reported on domestic sales and (2) from six Ontario cities. An effort was made to select the latter on as comparable a basis as possible. The number of consumers and the population served in the two groups are approximately the same.

TABLE XVIII  
RESIDENTIAL OR DOMESTIC SALES IN NEW YORK STATE AND ONTARIO CITIES  
FOR 1926

	Revenue	Kw. Hr. Consumption	Number of Customers
<b>New York State</b>			
Buffalo General Electric Company....	\$3,222,799	94,709,452	132,620
Niagara Electric Service Corporation.	349,983	9,409,263	13,993
Kingston Gas & Electric Company...	155,963	1,477,347	6,799
Binghamton Light, Heat & Power Corporation.....	739,920	8,465,457	23,930
	\$4,468,665	114,061,519	177,342
<b>Ontario</b>			
Toronto.....	2,266,922	131,452,559	119,783
Hamilton.....	544,809	33,971,983	26,537
London.....	332,049	21,752,627	15,835
Brantford.....	124,389	8,223,516	5,762
Niagara Falls.....	118,323	9,689,182	3,955
St. Catherines... ..	104,657	7,613,558	5,198
	\$3,491,149	212,703,425	177,070

On the basis of the above figures averages were computed as to monthly consumption, monthly bills and costs per kilowatt hour. The results follow:

<sup>15</sup> The fifth locality (Paul Smiths) was omitted in the compilation because of its limited population.

TABLE XIX

REVENUES, CONSUMPTION AND AVERAGE COSTS IN 1926 FOR DOMESTIC CONSUMERS IN A GROUP OF NEW YORK STATE AND ONTARIO, CANADA, CITIES AND TOWNS

	New York Cities	Ontario Cities
Revenues.....	\$4,468,665	\$3,491,149
Consumption.....	114,061,519 kw. hr.	212,703,425 kw. hr.
Number of consumers.....	177,342	177,070
Average monthly bill.....	\$2.10	\$1.64
Average consumption per month	53.6 kw. hr.	100.1 kw. hr.
Average cost per kilowatt hour..	3.92 cents	1.64 cents

The above summary shows that the average monthly consumption per customer was nearly twice as great in Ontario and the corresponding cost about 80 per cent as much as in New York State.

The average cost per kilowatt hour for domestic service is approximately 1.64 cents in Ontario, Canada, and 3.92 cents in the New York State cities, or a ratio of 1.00 to 2.39 respectively. This conforms to the ratios for domestic service (Cases 1 and 2), as given in Table XVII.

These figures further justify the conclusion that domestic consumers in Ontario are being well served by the publicly owned and operated system. Additional evidence of the "service policy" of the Hydro Commission is to be found in the continuous reduction of costs per kilowatt hour to domestic consumers. This has resulted in a steady increase both in the number of consumers and in the average amount purchased per month, as well as in the revenues of the local electrical authority. A typical report is included at this point to indicate the effect of "inducement rates" on consumption and the "spread" of users.

## ELECTRICAL UTILITIES

TABLE XX

HAMILTON (DOMESTIC SERVICE)

Year	Revenue	Con- sumption	No. of Consumers	Average Monthly Con- sumption	Average Monthly Bill	Net Cost per Kw. hr.
	Dollars	Kw. hrs.		Kw. hr.	Dollars	Cents
1913	34,452	863	5,117	...	....	3.9*
1914	74,668	1,857	8,404	23	.92	4.0
1915	92,724	2,514	10,595	22	.81	3.7
1916	108,137	3,625	12,423	26	.78	3.0
1917	135,224	5,277	14,340	32	.84	2.6
1918	157,020	6,582	15,421	36	.87	2.3
1919	187,080	8,236	17,652	39	.88	2.3
1920	194,103	8,959	18,195	41	.94	2.3
1921	237,349	11,043	19,822	46	1.00	2.1
1922	277,025	14,747	21,620	59	1.11	1.9
1923	356,343	20,528	24,543	70	1.21	1.7
1924	389,531	24,412	24,556	83	1.32	1.7
1925	428,730	28,358	25,426	93	1.40	1.5
1926	544,809	33,972	26,537	109	1.74	1.6
1927	608,034	37,758	27,642	116	1.87	1.6

\* Net cost prior to Hydro 8 cents per kilowatt hour.

In 1914, when the average cost was 4.0 cents, the average monthly consumption was 23 kilowatt hours and the average monthly bill was 92 cents. In 1927, when the average cost was 1.6 cents, the average monthly consumption was 116 kilowatt hours and the average monthly bill was \$1.87. Similar data might be presented for a number of cities. It should also be noted that the revenues from domestic service in Hamilton have increased in the years 1913-1927 from \$34,452 to \$608,034. In other words, the progressive policy of mass production at low unit costs and corresponding mass consumption induced by low prices seem to have justified themselves from both the economic and social points



In order to discover in what ways such quantities of electrical current are utilized in the home an intensive study was made of four small typical units in Ontario to determine the amount of electricity used and the types of devices installed by householders in these villages. Winchester, Lucan, Norwich and Milverton were selected as representative small villages. The average consumption in these towns was, respectively, 57, 68, 74, and 60 kilowatt hours per month. The total number of consumers was 966. Of this number 19 per cent had electrical ranges, 34 per

TABLE XXI

USE OF ELECTRICAL DEVICES IN FOUR TYPICAL VILLAGES IN ONTARIO, 1927 <sup>16</sup>

	Winchester	Lucan	Norwich	Milverton
Population.....	1120	538	1328	992
Number domestic consumers.....	263	165	335	203
Average monthly consumption.....	37 KWH	68 KWH	74 KWH	60 KWH
Average monthly bills.....	1.62	1.98	1.45	1.54
Devices				
Ranges.....	38	43	75	35
Hot Plates.....	11	7	25	3
Washers.....	37	27	200	65
Vacuum cleaners.....	20	5	60	15
Grates.....	0	6	6	4
Air heaters (auxiliary service).....	38	15	80	1
Ironing machines.....	0	0	1	0
Irons.....	230	126	400	75% estimate
Refrigerators.....	0	5	8	7
Toasters.....	86	22	200	almost all
Grills.....	85	16	200	
Water heaters.....	5		35	9

<sup>16</sup> Most of the data were derived from the annual census of appliances taken by the representative of the local electrical authority.

cent had washers, 10 per cent vacuum cleaners, 5 per cent were equipped to use electrical current as an auxiliary for house heating. The pertinent data for the four villages are brought together in the accompanying table.

Figures of this sort might be multiplied many times over both for town, city and country. They signify not alone economy and convenience, but also leisure and the social changes that flow from it. Not the least important consequence of the Hydro Commission's policy of public service is the electrification of the homes of Ontario. This has had a marked effect on the standard and mode of living of the people.

### *Conclusion*

The origin, character, financing and operating methods of the Ontario League of Municipalities which cooperate in the generation and distribution of electricity have been described in this chapter. The experience of the past twenty years in Ontario goes to show the feasibility of public ownership and operation along approved business-like lines and at the same time according to high standards of public service.

Comparisons which have been set up between representative cities prove that the Ontario consumers under the public system are faring somewhat better than New York consumers under private management. The method employed was to compare monthly bills for specified quantities of a typical character rather than to compare average kilowatt hour costs and revenues, on the ground that the latter method leads to erroneous conclusions because of many variables which cannot be eliminated through the averaging process.

The aim of this comparison was not to demonstrate the superiority of one system over the other, but rather to

show that according to the criterion of the costs of New York State cities the purchasers of electrical energy in Ontario enjoy satisfactory rates. More sweeping conclusions did not seem warranted because of the necessity of taking into account a wide range of factors and differences that do not readily lend themselves to statistical treatment. The comparisons do indicate, however, that one class of consumers in Ontario is apparently not subsidizing another class, as is so often claimed; that is, unless a similar situation exists in the cities south of the border. They indicate further that low costs for domestic service lead to greater average consumption; in other words, that "inducement rates" bring results. Finally, the supplementary data show how low-priced electricity may be of benefit to rural and urban domestic consumers.

## CHAPTER X

### CONTROL THROUGH A NATIONAL PLANNING COMMISSION

THERE is a possibility that a considerable amount of the competitive and costly operations of the various holding company groups which are seeking control of the still independent plants of the country might be eliminated through the agency of a national planning commission. No definite proposal to this effect has been made as yet but the idea warrants serious consideration. Similar suggestions have been advanced for the rubber and oil industries. They have always been held up by the fear of the industries involved that they might lose some measure of their present autonomy. The power industry, being a public utility, is in a different class. The fact that its holding companies rather than its operating companies usually make the decisions determining the character of the development of the industry involves a legal difficulty already discussed. Only as long as the present fiction is maintained, that only the decisions of operating companies affect the consumers, will the national and regional development of the power industry remain outside the sphere of public control.

England may be taken as an example of a nation which has clearly "taken stock" of its light and power situation and has prepared a comprehensive plan for the reorganization of this basic industry to secure the maximum of public service. This reorganization is not only an attempt to meet present needs but also to provide for future developments in order to "insure that there shall be an adequate and economical supply of Electrical Power for all classes of consumers in the United Kingdom." The salient points in the English system will be outlined as illustrative of the



possibilities of complete integration, consolidation and control under direct government auspices in the interests of economy, efficiency and service.

The demand for a thoroughgoing, farsighted policy with reference to this industry became insistent at the close of the war. One of the preliminary reports testified to the fact that if British industry was to be able to meet international competition after the war, general extension of the use of electric power to be supplied at the lowest possible price must be secured.<sup>1</sup> Motivated by this desire the leaders in industrial, business and governmental circles engaged in an extensive survey of the situation during the years 1918-1926.

Previous to the war the development of that industry in England was somewhat different from that in the United States. In both cases the development of the industry was theoretically to be controlled by legislation. The Electric Lighting Acts of 1882, 1888 and 1909 and the Electric Lighting (Clauses) Act of 1899 are comparable at least in intent with the statutes passed by our several state legislatures in which regulatory powers are granted to the public service commissions. The procedure to be followed in creating and controlling power companies is outlined in these Acts. They also enumerated various conditions and restrictions which should be imposed upon electric "undertakers" <sup>2</sup> both public and private. They provide for possible purchase of private electricity undertakings by local authorities <sup>3</sup> and outlined conditions of the same. They delegated a certain amount

<sup>1</sup> Report of Electric Supply Commission to the Board of Trade: The Williamson Report (London, 1918), p. 1.

<sup>2</sup> "Undertaker" is the term used to denote an agency with legal authority to undertake, or engage in, the industry.

<sup>3</sup> By the term "local authority" is meant any municipality or public corporation authorized to engage in supplying electricity.

of authority to the Board of Trade to regulate the undertakers and in general set up the conditions for carrying on enterprises in the field of light and power.<sup>4</sup>

Undertakers consisted of both public authorities and private companies. The private companies were of two kinds. There were the local distributing companies called "Electricity Companies" which generated little current, were restricted to small local areas and were subject to purchase by the municipalities at certain stated intervals. Then there were the "Power Companies" which were generally engaged in generation and transmission only and which served relatively large areas and had perpetual corporate rights not subject to purchase. Frequently the financial control of both electricity companies and power companies was in one and the same hand. The interlocking directorate seems to have been the means by which this was secured, rather than the holding company as in this country. In 1916 there were 230 private companies and 327 local authorities operating electrical undertakings.<sup>5</sup> By 1923 distribution was handled by 237 private companies and 335 local authorities, while generation was controlled by 190 private power companies and 248 local authorities.<sup>6</sup> This predominance of public ownership and operation indicates an attitude on the part of the English which is somewhat different from the one prevailing in the United States. In analyzing the situation Professor Hormell states that this condition is due largely to the fact that the public authorities were first

<sup>4</sup>For detailed analysis of these early Acts see F. N. Keen, *The Law Relating to Public Service Undertakers* (London, 1925), pp. 1-10 and 212-283.

<sup>5</sup>Report of Electric Supply Commission to the Board of Trade: The Williamson Report (London, 1918), p. 14.

<sup>6</sup>Report of the Weir Committee (London, 1926), p. 4.

in the field and also because public ownership and operation had proved successful.<sup>7</sup>

In both the United States and England the legislation designed to control the power industry was enacted when the problem of electric supply was essentially local in nature. In neither country had the regulatory legislation anticipated the startling developments which would make it a national industry and give rise to a serious national economic problem. In this country private enterprise has succeeded in creating interstate systems which are rapidly expanding and are keeping pace fairly well with the demands for power. As has been pointed out previously, our difficulties rise from the narrowness of the regulatory legislation from the point of view of public welfare in the matter of rates and from the fact that we have a scheme of state control for a national industry. In England, however, the character of the legislation has retarded the development of the industry itself while the question of the public interest has been fairly well taken care of. The predominance of public undertakings made it impossible for private enterprisers to organize a national system comparable to that in the United States. Such a system could be developed only through the acquisition of the control of a majority of the local companies. This was out of the question in England. Thus the electrical system in that country could not be expanded along national lines until a fundamental alteration in the legislative enactments had been made. As a result of this and the industrial depression of the country, the consumption of electricity per capita in Great Britain was 110 units as compared with 500 in the United States.<sup>8</sup>

<sup>7</sup> Orren C. Hormell, "Electricity in Great Britain, A Study in Administration," *National Municipal Review*, June, 1928, Vol. XVII, No. 6, Supplement, p. 368.

<sup>8</sup> Report of the Weir Committee (London, 1926), p. 5.

To sum up the two situations: In the United States there has been a considerable expansion and enlargement of the industry with inadequate regulation and control in the public interest, whereas in England the chief weakness has been the absence of a general development of the industry itself.

In order to remedy this latter situation a committee was appointed by the Board of Trade.<sup>9</sup> It reported a series of recommendations in 1918 which would have completely reorganized the industry. A bill was presented to Parliament embodying these recommendations. This bill was opposed by the private power interests and by their efforts seriously emasculated, with the result that only a beginning was made. The act which was passed created an administrative agency to be known as "Electricity Commissioners," to be appointed by the Minister of Transport with the concurrence of the Board of Trade.<sup>10</sup> Several important changes in the procedure and administrative arrangements for the control of "electricity supply" were brought about by the act. The most important single development was the creation of the Electricity Commissioners. This body consisted of experts who were to devote their entire time and effort to the investigation of the conditions of the industry as viewed from the national standpoint. As a result the Weir Committee, from the report of which the basic material was drawn for the Electricity (Supply) Act of 1926, had before it not only the conclusions of the earlier committees and other investigating bodies but also a body of objective data from this permanent agency. Upon the basis of these seven years of study Parliament passed the

<sup>9</sup> Report of the Williamson Committee (London, 1918).

<sup>10</sup> Electricity Supply Act of 1919 (9 and 10 Geo. 5, Chap. 100), Sec. 39.



act of 1926 which completely reorganized the light and power industry in England.<sup>11</sup>

#### ORGANIZATION AND FUNCTIONS

The 1926 law creates a new administrative agency known as the "Central Electricity Board." This board does not supplant the "Electricity Commissioners" created by the act of 1919 but is an additional agency. The board is composed of eight members appointed by the Minister of Transport after consultation with interested bodies such as representatives of "local government, electricity, commerce, industry, transport, agriculture, and labor." Members of the House of Commons and persons owning securities in any company engaged in the business of supplying electricity are not eligible for appointment to this board.<sup>12</sup> The term of office for members is for "Not less than five years nor more than ten years as may be determined by the Minister before the appointment."<sup>13</sup> The members are paid salaries which are fixed by the minister.<sup>14</sup> The members of the board are not engineers or experts in the particular field of electrical supply. Rather was it intended that the personnel should represent the interests mentioned above and should possess a general knowledge of national industrial needs together with administrative experience and ability. This intention of the act was adhered to in the first appointments. The technical phases of the administration of the industry are to be managed by the Electricity Commissioners.

<sup>11</sup> The important Committee reports include: Coal Conservation Subcommittee of the Reconstruction Committee; Electrical Grade Committee; Electrical Supply Committee (Williamson Report); and the Weir Report, as well as the Annual Reports of the Electricity Commissioners.

<sup>12</sup> Electricity (Supply) Act, 1926 (16-17 Geo. 5, Cap. 51), Sec. 1, Sub. Sec. 1, 2, and 3.

<sup>13</sup> *Ibid.*, Sec. 1, Sub. Sec. 8.

<sup>14</sup> *Ibid.*, Sec. 1, Sub. Sec. 9.

The policy established by the act involves the adoption of various "schemes" for the integration and consolidation of the industry. The United Kingdom is to be divided into several "areas," each of which shall be a unit in the national system. A "scheme" is to be adopted for each one of these "areas." These schemes are to be prepared by the Electricity Commissioners and are to be transmitted to the Central Electricity Board by that body. Each scheme so transmitted shall include proposals providing for the following:

(1) The area in which the scheme is to operate shall be definitely set forth.

(2) The generating stations which have been chosen to be "selected stations" to generate all the electricity for that area shall be listed.

(3) Provision must be included for the building of new transmission lines or the acquisition of existing ones which shall interconnect the generating stations within the area and in turn connect these with the authorized undertakers or distributing companies.

(4) A complete plan for the standardization of frequency to make interconnections workable must be set forth.

(5) All other details necessary for the successful operation of the scheme are also to be included.<sup>15</sup>

After the scheme has been transmitted to the Central Electricity Board it must be published. One month after such initial publication the board will listen to criticisms made by authorized undertakers or other interested persons. After that time the board may adopt the scheme either in its original form or with amendments as deemed advisable as a consequence of the criticisms received. After adoption it must be published in the revised form. It then becomes

<sup>15</sup> Electricity (Supply) Act 1926, Sec. 4, Sub. Sec. 1.

the duty of the board to put into effect the provisions of the scheme and to begin the administration and control of the industry within the given area according to the specified provisions. In case any of the authorized undertakers involved consider that the plan is "prejudicial to them" they may demand that their complaint be subject to the arbitration of a barrister. This demand must be made within one month after publication. The barrister who shall be the arbitrator shall be appointed by the Minister of Transport from a panel set up by the Lord Chancellor, or in Scotland by the Lord President of the Court of Session. If he should be satisfied that the complaint is just he may amend the scheme or order the payment of money damages to satisfy the claim. In case any complaint is made involving a change in the scheme that the board certifies "would conflict with the basic principles of the scheme or prejudicially affect its efficiency," the arbitrator can award damages only. He cannot order the board to make such change.<sup>16</sup>

*Generation.* The Central Electricity Board is in the main entirely responsible for administration. As mentioned before, the scheme must enumerate specifically the generating stations which are to produce power for the area in question. It then becomes the duty of the board to make arrangements with such stations for alteration, additions or repairs which the board with the approval of the Electricity Commissioners shall deem necessary for efficient operation. In case the owners of any such stations shall feel that the plan would entail unreasonable financial burdens the whole matter must be arbitrated as outlined above. In case any owners of such stations should refuse to agree to the arrangements, the act gives the Minister of Transport authority to empower any authorized undertaker

<sup>16</sup> Electricity (Supply) Act 1926, Sec. 4, Sub. Sec. 2-5.

or any company or person approved by the board to acquire such station at a price to be determined by an auditor appointed by the Electricity Commissioners.<sup>17</sup> This price according to law shall represent: "The amount of the expenses properly incurred on and incidental to the provision of the generating station . . . less depreciation on a scale fixed by special order." Dissatisfaction with the price so fixed will constitute grounds for arbitration in the same manner as noted above. In this way purchase is established on the basis of actual cost, or the "prudent investment" theory less depreciation, in contrast to the dictum of the courts in this country which have emphasized as the basis reproduction cost new minus depreciation.

If the minister should be unable to find an authorized undertaker or an approved person or company willing to purchase such generating plant on this basis, the board is authorized to acquire the station for itself. In either case, however, when an order of acquisition is issued it does not take effect until the matter has been laid before "each House of Parliament for a period of not less than thirty days, and if either House of Parliament before the expiration of that period presents an address to His Majesty, no further proceedings shall be taken thereon."<sup>18</sup> Should the board acquire the generating plant for itself under the conditions mentioned above, it may either operate it or arrange to have some company or person do so for it. The board may operate the plant itself only when it can satisfy the Electricity Commissioners that no company or person can be found to operate it on reasonable terms.<sup>19</sup> In case new generating plants are required in the adopted scheme they are to be built under the supervision of the board, but

<sup>17</sup> Electricity (Supply) Act 1926, Sec. 5, Sub. Sec. 1, 2.

<sup>18</sup> *Ibid.*, Sec. 5, Sub. Sec. 2.

<sup>19</sup> *Ibid.*, Sec. 5, Sub. Sec. 3.



again with the provision that it is not to erect or operate plants unless it is impossible to find some private company to perform the task.<sup>20</sup>

The owners of selected stations are required by law "to operate the station so as to generate such quantity of electricity, at such rates of output, as the Board may direct, and to conduct such operations with due regard to efficiency and economy." They are also required to sell to the board the entire amount of electricity that is generated at the station. That is to say, whether the station is owned by a local authority or private undertaker the entire management and control of the process of generation of electricity is in the hands of the board. The board is also to purchase every bit of electricity generated by all selected stations whether privately or publicly owned. The price which the board shall pay<sup>21</sup> for this electricity is fixed as the "cost of production." The law defines the cost of production as including money expended for supplies, management and general establishment expenses and interest with an allowance for depreciation. In each case the item of interest and depreciation is fixed according to a legal standard differing with the character of the owner.<sup>22</sup> In case the owner of the generating station is also an authorized undertaker for purposes of distribution the law provides that the board shall resell to such owner electricity sufficient for the needs of the undertaking. The resale price shall be the "cost of production," computed as before, plus "a proper proportion of the Board's expenses other than those incurred by the Board in the purchase or generation of electricity, or according to the tariff under this Act for the supply of electricity by the Board, whichever is the lower."<sup>23</sup> Thus the first

<sup>20</sup> Electricity (Supply) Act 1926, Sec. 5.

<sup>21</sup> *Ibid.*, Sec. 7, Sub. Sec. 1, 3.

<sup>22</sup> *Ibid.*, Schedule 2.

<sup>23</sup> *Ibid.*, Sec. 7, Sub. Sec. 2, 4.

phase of the process of electric supply (generation) is completely controlled by the board, which is also the sole purchaser of the resultant electricity.

*Transmission.* The next step in the process is transmission. The act authorizes the board to construct the necessary main transmission lines as soon as the scheme shall have been adopted. These lines are to connect the selected stations with each other and the selected stations with the authorized undertaker. The board may also acquire existing transmission lines owned by authorized undertakers upon payment of a price to be fixed by an auditor appointed by the Electricity Commissioners in the same manner as provided by law for the acquisition of selected stations.<sup>24</sup> Thus the law provides for public ownership of all transmission lines under the board.

*Distribution.* Once the board has completed the arrangements with reference to selected stations and the construction or purchase of the necessary connecting transmission lines, it is ready to sell electricity to the local distributing companies. The law provides with certain limited exceptions that when the board issues a notice that it is in a position to supply electricity, it shall at once be under obligation to supply to any authorized undertaker the amount of electricity needed at a price to be fixed according to provisions in the law.<sup>25</sup> In case the owners of a nonselected generating station should apply for a supply of electricity, the board may make it a condition of furnishing such supply that the owners shall take their entire supply from the board rather than just the amount they need in excess of what they themselves generate. The board may do this, however, only when it shall be certain that it can furnish such entire supply over a seven-year period at a unit cost

<sup>24</sup> Electricity (Supply) Act 1926, Sec. 8.

<sup>25</sup> *Ibid.*, Sec. 10, Sub. Sec. 1.

less than that at which the owners can generate electricity at their own plant.<sup>26</sup>

The electricity which the board shall have purchased in the manner previously described and which it shall have available for sale to authorized undertakers as outlined above shall be sold at a price which will provide an income to the board over a period of years sufficient to meet all necessary expenditures.<sup>27</sup> That is to say, it is not intended that the board shall make any profit on the resale of the electricity. The price may be fixed by the board with the approval of the Electricity Commissioners or the price scale can be fixed by order of the Electricity Commissioners, subject to the approval of both houses of Parliament.<sup>28</sup> The one limitation on the resale price to owners of selected stations is that it shall not exceed the cost at which the owners could have generated the electricity themselves.<sup>29</sup>

Nonselected generating stations may be compelled to shut down according to provisions in the law.<sup>30</sup> In case the board shall notify the owners of such stations that it is able to supply to them an adequate amount of electricity at a lower cost than that at which the owners can produce electricity in their own plants, the Electricity Commissioners may order them in case of refusal to suspend operation of their own plant, to purchase their entire supply from the board and close their own generating station.

Thus the act of 1926 provides in detail for the generation of electricity at the lowest possible cost at the most efficient stations while relatively inefficient stations will be closed down. It also provides that the transmission of this electricity shall be under the auspices of the Central Electricity

<sup>26</sup> Electricity (Supply) Act 1926, Sec. 10, Sub. Sec. 2, 3.

<sup>27</sup> *Ibid.*, Sec. 11, Sub. Sec. 1.

<sup>28</sup> *Ibid.*, Sec. 11.

<sup>29</sup> *Ibid.*, Sec. 13.

<sup>30</sup> *Ibid.*, Sec. 14.

Board which, after purchasing the entire supply generated within an area, shall resell it at cost plus expenses to the local distributing companies both public and private. Undoubtedly the act will make possible a reduction in cost of electricity to the local distributing companies, the authorized undertakers.

*Rates.* The question now arises as to whether the consumer will profit by such reduction of costs, or will it merely mean increased dividends for the distributing companies? If the former possibility is to be realized the situation obviously calls for rate regulation with regard to the retailing of electricity to consumers. Professor Hormell expresses a fear that adequate protection in this direction has not been given under the act.<sup>31</sup> The method of rate regulation was certainly modified but little by the act of 1926. As was mentioned previously, companies and local authorities generally received their authority to engage in supplying electricity through special orders granted previous to 1919 by the Board of Trade and since that time by the Electricity Commissioners. In the case of private companies such authorization is frequently given by parliamentary action. The Electric Lighting (Clauses) Act of 1899 furnishes the bases for many of the requirements and provisions included in the special order. There is usually found in the provisions of this special order a schedule of maximum prices which the undertaker may charge for electricity. This is true in the case of either a local authority or a private company. In addition the former are limited in their use of excess earnings, while the accounts of the latter are subject to audit by an auditor selected by the Minister of Transport. There are other general requirements included in the incorporating orders of both types of undertakers. But we are interested here primarily in the question of rate

<sup>31</sup> *Op. cit.*, pp. 380-393.



regulation and enough has been stated to show that, in general, rates have been determined by a fixed scale incorporated in the order or charter which gives the local authority or the company the privilege of engaging in electrical supply. This is of course a questionable method of rate regulation. The English are aware of this fact and the probability is that a change will be made in the near future.

Despite this deficiency one must admit that a fundamental reorganization of the industry has been brought about. Since the act went into effect, the scheme for the Central Scottish Area has been adopted and the board has taken a number of steps toward putting it into effect. A second scheme for the southeast of England has been sent to the Central Electricity Board by the Electricity Commissioners and is being considered. A third scheme is under way and will be sent to the board in the near future.

According to reports in the fall of 1928, the work of devising a comprehensive plan in England is developing and the great power companies have not been adversely affected. The output continues to grow despite trade depression, and the number of consumers continues to increase. The reduction in rates will stimulate further demand. As to the future, it is hoped that the time is not far distant when cheap electricity will be available from one end of the country to the other.

The English plan is clearly based upon the policy of integration of public and private enterprises and a consolidation of control under a single national authority, supplemented by another national agency of experts. The goal is an adequate supply of low cost electricity to be secured by complete interconnection, standardization of frequency, elimination of inefficient generating stations and the wholesaling of electricity to distributing companies at cost. It is a real experiment in national economic control. The new

program is based on the conviction that the organized and unified development of the electrical industry is so necessary for the well-being of all the people that it cannot be left to the vagaries and uncertainties of more or less isolated public enterprises, on the one hand, and the forces of private initiative, on the other. This branch of the public utilities definitely passes thus from the realm of the quasi-public into that of the public industries.

## CHAPTER XI

### CONTROL THROUGH NATIONAL OWNERSHIP

THE movement for national ownership and operation of the power industry has never gained very much momentum in this country. Furthermore, with the exception of certain districts, the interest in municipal ownership is on the wane. There has been a progressive decrease in the number of municipalities which operate their own electric utility. On the other hand, public ownership is being advanced with somewhat more frequency, as an alternative to public regulation, because of the inadequacy of the latter. One can hardly say that this has reached the point of being a movement. Not a few people in responsible positions who would look upon public operation reluctantly think of it as possibly the only alternative to an entirely unsatisfactory situation. Associated with them are of course those relatively small groups of outspoken advocates of public ownership.

By way of illustration of the former tendency we may point to the stand taken by Commissioner H. C. Atwill of the Department of Public Utilities of Massachusetts. When this department attempted in 1928 to urge a bill invoking the contract power of the state, its chairman, Commissioner Atwill, said: "I think it is the belief of all of the members of the Department that the principle of regulated monopoly as heretofore obtaining in Massachusetts in relation to gas and electric companies, and particularly electric companies, cannot prevail, and that the public will be forced into public operation of the electric utilities unless some means can be advanced by which the greed of some of the electric companies can be curbed so that we can proceed with the principles of proper capital undertaking a public service under control of the Legislature."

This statement followed one made to the legislature by the commissioners in 1927. "In our judgment the people of this Commonwealth will seek a means of escape from such a situation. Two courses will be open to them: (1) public operation of such utilities, or (2) the operation of the utilities by private capital in those instances where the public utilities are willing to enter into a contractual relationship with the public. . . . Public ownership and operation of electric plants is not an untried experiment in this Commonwealth. There are at present over forty municipal plants in successful operation. In most of the municipalities where these plants are in operation the rates for electricity are lower than the rates of private companies operating in adjacent territory."

The most common arguments for a national public power industry, in addition to the one that current regulation is an essentially ineffective means of control, are that the power industry is too important to the welfare of the nation to be left in private hands, that its advantages can only be secured to the nation as a whole by a well-planned development, by elimination of the speculative feature of the industry and by removal of the profit motive. The attempt of the power companies and their national associations to control public opinion and to a certain extent political life, has been interpreted by some as showing the danger which a very powerful industry, constantly dependent upon government for its survival, can be to democracy. The constant resistance of the utilities to effective public control is also taken as an indication of the danger that a force too great to be controlled is growing up in the country alongside the government.

Most of the present-day discussion of public ownership runs in the terms that the privately owned power industry is not fulfilling its promise, that a lion's share of its bene-



fits are going to a few rather than contributing to the growth and well-being of the whole country. Instead of being devoted to increasingly better service and lower costs and rates, that function is left to salaried engineers who gain little by the success of a company. It is claimed that private initiative freed from the force of competition is devoted to propaganda that will prevent public interference and to building up a large rate base which will keep rates from being reduced. A peculiar situation has come about in which it does not particularly pay a company to be thrifty in its capital equipment or operating expenses. A ten million dollar office building or an expensive city location is even preferred to a five million dollar building on an inexpensive location which would serve equally well, for the reason that it increases the base on which the consumers have to pay rates. The same result, it is asserted, is obtained through high operating expenses. In short, almost none of the supposed advantages of private initiative are found to be going to the consumers. The argument runs that when an industry is in this situation it would be better to have its capital invested in some non-public industry where there will be no objection to its making all the profit possible.

From the point of view of feasibility the electrical industry has many features that are requisite for a public enterprise. (1) The engineering processes involved in generation, transmission and distribution have become well standardized. (2) The product undergoes no change of form since there is but one quality. (3) The method of measurement is simple and definitely standardized. (4) The personnel required is relatively small, technical in character and engaged largely in routine work. (5) If profits were eliminated and low rates prevailed there would be little difficulty with the promotion of sales as electricity

would be used as universally and freely as water. In view of these characteristics it would appear that this industry might be so organized and administered that there would be comparatively little call for the qualities of initiative and resourcefulness which are so necessary in an unstandardized and pioneering enterprise.

Considering, then, the public rights and needs involved, on the one hand, and the feasibility of operation, on the other, much may be claimed for the propriety and desirability of a power monopoly under governmental auspices.

There is no definite proposal before the country for nationalization of the power industry that describes in a detailed way the manner in which the change would be effected. In those circles where the public power monopoly is advocated with the greatest enthusiasm there is still more talk about the "principle" of public ownership of a national necessity than of ways and means. In the following pages it will be possible only to sketch and briefly outline what would be involved in establishing a national power monopoly.

The nationalization of the power industry might be brought about in two ways: (1) the gradual extension of public operation, largely through the interconnection and expansion of existing municipal plants and the absorption of private companies and the further development of potential resources now in the possession of the national and state governments, and (2) the taking over of all existing generating and distributing systems, plants and properties and the establishment of a single unified organization under public control.

1. The former plan would seem the more feasible, particularly when it is considered that a nucleus is already at hand in the form of 2,581 municipal plants with an estimated valuation of \$50,000,000. In 1922 these served an

aggregate of 12,709,000 people and distributed 4,465,000,000 kilowatt hours of electrical energy.<sup>1</sup> If the federal and state governments should develop the power not yet utilized on public streams for the purpose of supplying communities with electricity at cost, and the latter should install competing systems of distribution or even purchase the private companies now operating within their limits, the public might become a controlling factor in the market in a comparatively short space of time. Ultimately it might absorb all private companies engaged in the various branches of the industry. Under this plan production and transmission would be in the hands of national or state agencies or regional boards and the distributing systems in the hands of the municipalities and other local units. Both the Ontario and English schemes described in earlier chapters might serve as precedents for this procedure.

This plan would ultimately result in the nationalization of the electric light and power industry. A central authority would necessarily be set up in order to coordinate and unify the whole system. Administrative policies would have to be carefully worked out to prevent overlapping and gaps and to secure efficiency. If efficiently run, reasonable rates would be assured the consumer because the profit motive would be eliminated. The process would be one of gradual expansion, on the one hand, and absorption of going concerns, on the other.

2. The second proposal is that the government take over at one time all of the private electric light and power companies and coordinate them with the public plants now operating. Some such procedure was followed during the war when the government organized the United States

<sup>1</sup> These are the last official figures taken from the U. S. Census. According to the *Electrical World* (January 5, 1929, p. 5), only 1910 municipal plants were operating in 1928.

Railroad Administration. In case this method were employed it would be necessary to retain as managers the men now engaged in these enterprises and the operating staff of each company would become government employees. It would be necessary to develop a national authority under this plan to control the entire industry and to establish regions with assistant directors.

The obstacles to be overcome in the realization of this proposal are to all practical intents and purposes insurmountable. A constitutional amendment would probably have to be passed. Upwards of nine billions of dollars would have to be raised to defray the purchase costs. The deep seated opposition to government ownership would have to be overcome. Finally, the inefficiency that is apparent in so many public enterprises would have to give way to high standards of business management.

The first, less ambitious plan is clearly the more feasible. The difficulties would be lessened because of the long period required to accomplish the result. Adjustments could be made step by step until well-coordinated systems were built up under a qualified personnel.

But here too legal and financial problems of considerable magnitude immediately present themselves, to say nothing of the widespread conviction against public ownership.

On the legal side are all of the difficulties that arise in connection with public condemnation proceedings. Hundreds of power companies own franchises, contracts, rights of way and property rights in tangible physical property. These would have to be condemned and acquired by the public agency. At every turn in the process, existing rights which are protected by constitutional guarantees would have to be taken over. In interpreting such rights the courts have generally held that they apply to future possible returns as well as to present value of the property.



To predict the amounts of these returns would be a most complicated matter. It would open the door to countless suits and countersuits. An almost unlimited amount of formal "red tape" would have to be unwound before such properties and rights could be legally acquired by the public.

This brings to the fore the question of costs. For not only would the process of condemning existing properties result in extensive litigation, but it would also of necessity require the expenditure of vast sums of money. For every company now in existence would ultimately have to be compensated for all of its present rights and properties. In the country as a whole this would doubtless be in excess of nine or ten billion dollars. Cities with their limited capacity to borrow money would in almost every case be unable to finance the acquisition of their own local distributing systems. This would necessitate exempting bonds issued for this purpose from the debt limit of the city. States which are already borrowing increasing amounts for necessary public improvements would doubtless be able to finance a number of projects but they would indeed be hard pressed to raise the amounts necessary to set up a complete monopoly. Although the chief burden would fall on the federal government it would probably meet its obligation with less strain on its credit than the smaller governmental units. But even with the probable advantage of lower costs for capital there is no question but that it would require an especially fortunate type of management to escape wrecking the financial structure of the various public jurisdictions that would be involved.

It has been suggested that the financing of new plants could be accomplished by a public system at a lower rate of interest than by private companies. This would be true if the bonds were to become a legal obligation of the

government and probably the most effective plan would call for this procedure. If a public corporation were to be organized such as the New York Port Authority, the rates would depend on the property on which the mortgage was issued. These rates have not been much lower than the bonds of the larger and more dependable public utility companies.

In the Ontario Hydro system, the capital cost of the generation and transmission systems is loaned by the government upon receipt of formal requisition from the Commission. This money is repaid by the municipalities concerned over a period of years with interest in full. Although the Ontario system is not a public power monopoly, its method of securing money, borrowed as a public obligation but guaranteed by physical assets with a definite plan of amortization, furnishes a scheme which might be utilized by a public power monopoly in the United States. A variation of this method of financing would be to appropriate money for a revolving fund that would be repaid as time went on and reloaned to meet the needs of other public agencies, engaged in purchase of plants or material or in installing plants for the generation of electrical energy.

The method of securing credit at a low figure is of prime importance since one of the chief operating expenses is, obviously, the cost of capital. If, by the use of revolving funds, secured by public credit and tax exempt, one or two per cent may be saved on capital costs per year, the actual costs for power under public control would be materially lower than under private ownership.

Nevertheless the proposal which looks toward a gradual expansion of actual ownership by government seems far removed from the realm of possibility at the present writing. Legal and financial difficulties and, above all, strong

popular sentiment on the subject of government ownership are indisputably obstacles of no mean proportions.

In case the weaknesses in control outlined in the preceding chapters are not remedied and in case the private companies continue to conduct the industry much like any other profit-making enterprise, public ownership and operation may easily eventuate. As experience amply proves, the primary condition of public ownership of any public utility is dissatisfaction with the cost and service standards available under private operation. It may be confidently predicted that the present policy of high rates, of resisting control at every point, of secretiveness with regard to financial operations and of the dubious manipulation of public opinion will be but the initial step in the direction of a public power monopoly. The alternative and the only safe policy for a public utility enterprise is acceptance of such changes in the regulatory system as will eliminate the unfortunate practices which have grown up in recent years. The public has a right to service based on the lowest possible cost of property and to a fair share of the savings which result from improvements in organization and new processes. The private companies will probably find that their acceptance of this fact will forestall the movement toward national public ownership.

## CHAPTER XII

### CONCLUSION

THE first part of this work aims to show that the country is confronted with a series of major problems in the electrical industry, which taken all together constitute a crisis. The chief agency of regulation, the public service commission, is, generally speaking, falling far short of satisfactory performance of its functions. The only federal agency with any jurisdiction over this utility, the Power Commission, is so seriously handicapped in both organization and staff that it is all but impotent to carry out even the functions now imposed upon it by law.

But if these authorities were fully equal to their task there would still remain an appreciable area of public utility operation subject to no control or supervision whatsoever. Examples are the involved structures of holding companies, which now practically dominate operating concerns, and the whole range of interstate activities except recent and future developments on the national waterways.

Finally, there is a series of basic decisions which are bound to be made by the courts in the near future that will have a determining effect on the relations between the industry and the public it serves. Among these may be cited the Supreme Court's *ultimate* decision as to the basis of determining valuations for rate-making purposes.

Public indifference to the above named problems can be understood in view of the disclosures made before the Federal Trade Commission, but it cannot be justified in view of the issues at stake that so materially affect the future well-being of the country. This indifference makes the situation even more critical. For without a public alive to its own interest many of the problems can go by the board



for an indefinite period and to the great advantage of the utilities, while others will be handled in accordance with the well-conceived program of the latter which is, in the main, the program of exploitation.

There can be no doubt but that we stand at the parting of the ways. One road leads to governmental regulation in the public interest and the other to a minimum of regulation in the interest of controlling stockholders. Such is the crisis.

The second part is devoted to a consideration of possible types of supplementary control and organization. These range from a more or less fixed control by means of renewable contracts and such as might be effected by introducing competition under some public authority to governmental ownership and operation.

There is much to be said for the use of contracts as a means of stabilizing the industry, particularly if some acceptable method is not devised for determining valuations for rate-making purposes. It is to be hoped that the Massachusetts commission may be permitted to experiment with this policy. It would also be to the public advantage generally if one of the alternatives in the Boulder Dam and Muscle Shoals bills providing for the generation and sale of electricity at cost by a governmental agency with price control under a contract system scheme were carried into effect. This might well result not alone in reducing prices to the consumers served but also in furnishing a standard of comparison for both costs and rates that would exert a wholesome influence on rate structures in large sections of the country. In the absence of standard rate schedules and accounting methods and the lack of sound auditing procedure, and with the policy of concealment adopted by the controlling holding companies, it is now all

but impossible to determine basic costs and make worthwhile comparisons.

It is hardly conceivable at present that public ownership will come to the fore in this country on a national or statewide basis, even in the restricted way that is now in operation in Ontario where competition with private companies is to be encountered. The municipally owned plants that would form the nucleus of such a scheme are so widely scattered and operating for the most part under such handicaps as to plant and load factor that it would be difficult to get such a plan under way, particularly in view of the widespread acceptance of governmental inefficiency.

The Ontario system has, however, demonstrated the feasibility of public ownership and operation of this utility on a thoroughly businesslike basis and on a statewide scale. It demonstrates that it is entirely possible for the government to secure the services of competent managers and technicians if it is willing to pay adequate salaries and make appointments on merit. But ample evidence of this fact might readily be supplied from the public service in this and other countries. It is far from axiomatic that government enterprise is necessarily and inevitably inefficient.

It is not inconceivable that the Ontario experiment may serve as a beacon light to the people of the United States, should a wave of protest ever get under way at the methods of those in control of the industry on this side the Canadian border. The Massachusetts commission has already gone so far as to set up two alternatives: adoption of the contract method or state ownership. If the public is once aroused, the use of Ontario as a model will not be so remote as it now seems.

So far as immediate needs in this country are concerned the English program might well stimulate thought and

discussion. As was pointed out in Chapter X it provides for generation and transmission on a nationwide scale, utilizing existing plants and lines in every possible direction and expanding them further to form a gridiron of connections that will embrace the whole country on the basis of available sources of supply and present and probable demand. According to this scheme wasteful competition, expensive small-scale production and inefficient plants are to be eliminated while undeveloped or undersupplied areas are to receive their due share of current. The theory lying back of the plan is that electricity is a universal necessity and that it should be provided at the lowest possible cost to all consumers, consistent with a reasonable return to the investors in the industry.

The English are thus engaged in mapping out a national system of electrical demand and supply. They propose to realize the logical and businesslike implications of this map. The operations of the holding companies give promise of the ultimate development of such a map for this country. The word "ultimate" must be stressed. Before that is achieved through the trial-and-error and competitive processes now rampant in the industry, there will accumulate a great burden of obligations bound to affect all future consumers. Who can forecast what heavy tolls will be levied because of present speculative financing, of competitive bidding for operating plants that results more often than not in purchase prices far in excess of actual value, of the construction and maintenance of unnecessary parallel lines of transmission and of the maintenance of small and therefore inefficient units of production? From the point of view of present consumers, this interim period will be marked by the policy of charging all the traffic will bear instead of offering inducement rates and developing

rural and other less lucrative areas, as a number of more progressive companies are beginning to do.

Another sinister possibility that runs counter to national planning was hinted at in a recent announcement of the huge combine proposed by the Morgan interests. It was reported that the combine would be organized according to state lines in order to avoid the danger of federal regulation.<sup>1</sup> But a well-conceived electrical map will by no means coincide with state boundaries. Waterfalls and coal mines which would serve as the points of departure for a super-power system have not been distributed according to political boundaries. If these are to determine the organization of production and transmission, economical planning is being sacrificed. Such a policy should be condemned in the name of good national housekeeping.

There is no valid reason why the authority of the federal government should be invoked in bringing about a truly sound national scheme except that the major part of the industry is evidently in the hands of those who look upon it as any speculative and competitive enterprise. The operators—that is, those who produce and distribute units of electrical current—are no longer in control. They are now under orders. Many of them had and have convictions about serving the public and are fully aware of their obligations because of the advantage this utility enjoys at the hands of the public. But the majority of those determining policies seemingly overlook any such responsibility. They do not consider themselves as the custodians of public resources and rights nor do they seem to appreciate what great contributions to social and economic well-being they might make by expanding their services and reducing prices. Great economies have undoubtedly been effected by their engineering and financial enterprise. For these they should

<sup>1</sup> *New York Times*, January 11, 1929.



receive their appropriate reward. But what meager advantages have accrued to the public, their partners in the undertaking!

The leaders in the electrical utility field might well take a leaf out of the book of the American Telephone and Telegraph Company which went on record in its annual report of 1927 as standing squarely for a policy of public service. In the words of its president, Mr. Gifford, it was stated:

"There is, in effect, one profit paid by the System, and that is not and should not be large. The aim of the management—and it is the only aim that will protect in the long run the safety of the investment of the hundreds of thousands of stockholders—is to continue to furnish the best possible service at the least cost to the public. Extra or special dividends are entirely inconsistent with this aim and would be unsound. Earnings must, of course, be sufficient to permit the best possible telephone service at all times, and to provide a reasonable payment to stockholders, with an adequate margin to insure financial safety. Earnings in excess of these requirements will either be spent for the enlargement and improvement of the service furnished, or the rates charged for the service reduced. This is fundamental in the policy of the management."

Whether this company has actually put into effect all of the implications of this policy or not—some of its critics allege serious shortcomings—it is the only defensible policy for public service organizations and its attitude has resulted in a degree of public confidence and support that must be counted among the company's chief assets at the present time. In this respect it stands in an isolated position among the public utility organizations.

The primary and most urgent need in the electrical utility is public-spiritedness among the responsible leaders. By public favor and gift it enjoys monopoly privileges, it

is practically assured adequate profits, it uses public property from streets and highways to rivers and waterfalls and it exercises at times the state's sovereign right of eminent domain, finally it has the means of increasing economic welfare, of lessening toil and hardship and providing comfort and leisure to the whole population. This is truly a public enterprise. Its workers from the lowest to the highest might well be dominated by the spirit of enlightened public service.

The rank and file of the employees of the light and power companies and of many holding companies controlling them constitute a body of men which can probably hold its own with any similar body in other industries. They are fully capable of appreciating all the implications of enlightened public service and many of them do so. Possibly the most serious evil resulting from the policy of manipulation and secrecy with which the financial leaders have surrounded the industry is that it has engendered suspicion and lack of confidence not only among the public but among this splendid body of employees. It has thus sacrificed an invaluable asset of whole-hearted enthusiasm for an industrial and public-service ideal.

What is at stake is not the avoidance of flagrant dishonesty and actual misdeeds, but rather a restatement of the philosophy of public utility service that will square with the changing standards and ideals of the day. Under leadership imbued with such a philosophy secrecy would be taboo, resistance to reasonable control would vanish, publicity would be honest and aboveboard and the public would automatically enjoy its proper share in increased efficiency and improved organization without having constantly to take recourse to commissions and courts.

Without such leadership we may look forward to an unbroken series of appeals and costly litigation, to con-

tinuous lobbying by all parties concerned before legislatures and Congress, to growing dissatisfaction on the part of the public and ultimately to rigid and sweeping regulation, such as exists with the railways, if not to state ownership and operation.

TABLE NO. I

JURISDICTION OF REGULATORY COMMISSIONS OVER PRIVATELY OWNED  
ELECTRIC LIGHT AND POWER COMPANIES

[illegible]

TABLE NO. I (continued)

JURISDICTION OF REGULATORY COMMISSIONS OVER PRIVATELY OWNED  
ELECTRIC LIGHT AND POWER COMPANIES

State	Capita- lization and issue of sec- urities	Valu- ation for rate mak- ing	Rates and rate sched- ules	Ac- count- ing	Annual Re- ports	Serv- ice	Cer- tificate of con- veni- ence and neces- sity	Inde- termi- nate permit	Ac- count- ing clas- sifica- tion
30. New Mexico <sup>12</sup> .....	no	yes	yes	no	yes	yes	no	no	no
31. New York.....	yes	yes	yes	yes	yes	yes	yes	no	yes
32. North Carolina.....	no	yes	yes	no	no	yes	no	no	yes
33. North Dakota.....	yes	yes	yes	yes	yes	yes	yes	no	yes
34. Ohio.....	yes	yes	yes	yes	yes	yes	no	no	yes <sup>1</sup>
35. Oklahoma.....	no	yes	yes	Limi- ted	yes	yes	yes	yes	yes <sup>1</sup>
36. Oregon.....	no	yes	yes	yes	yes	yes	yes	no	yes
37. Pennsylvania.....	yes	yes	yes	yes	yes	yes	yes	no	yes
38. Rhode Island.....	no	yes	yes	yes	no	yes	yes	no	no
39. South Carolina.....	no	yes	yes	yes	no	yes	no	no	no
40. South Dakota.....	no	no	no	no	no	no	no	no	yes <sup>1</sup>
41. Tennessee.....	yes	yes	yes	yes	yes	yes	yes	no	no
42. Texas.....	no	no	no	no	no	no	no	no	yes <sup>1</sup>
43. Utah.....	no	yes	yes	yes	yes	yes	yes	no	yes <sup>1</sup>
44. Vermont.....	yes	yes	yes	yes	yes	yes	no	no	yes <sup>1</sup>
45. Virginia.....	yes	yes	yes	no	yes	yes	no	no	yes <sup>1</sup>
46. Washington.....	no	yes	yes	yes	yes	yes	no	no	yes <sup>1</sup>
47. West Virginia.....	yes <sup>13</sup>	yes	yes	yes	yes	yes	yes	no	yes <sup>1</sup>
48. Wisconsin.....	yes	yes	yes	yes	yes	yes	yes	yes	yes <sup>1</sup>
49. Wyoming.....	no	yes	yes	yes	yes	yes	yes	no	no

<sup>1</sup> Adopted uniform classification of account.

<sup>2</sup> Arkansas: Powers of Commission limited where municipal councils and city commissions have primary authority.

<sup>3</sup> Adopted classification of Federal Power Commission.

<sup>4</sup> Jurisdiction does not include home rule cities.

<sup>5</sup> No commission in Delaware.

<sup>6</sup> Jurisdiction limited to supervision of the construction, operation and maintenance of transmission lines.

<sup>7</sup> Limited jurisdiction in cities.

<sup>8</sup> Subject to prior power of cities with respect to local utilities.

<sup>9</sup> Applies to cities of 100,000 inhabitants or more.

<sup>10</sup> Michigan: No authority over rates fixed by franchise.

<sup>11</sup> Jurisdiction over electric companies applies only outside cities or villages.

<sup>12</sup> No jurisdiction in cities of 10,000 inhabitants or more.

<sup>13</sup> Jurisdiction only as to water power companies.



TABLE NO. II

## STATE REGULATORY COMMISSIONS

State	Title	Mode of Selection	No. of Commissioners	Term	Salary
Alabama.....	Public Service Commission	Elected	3	4 yrs.	\$4500-500 extra chairman
Arizona.....	Corporation Commission	Elected	3	6 yrs.	3000
Arkansas.....	Railroad Commission	Elected	3	2 yrs.	3600
California.....	Railroad Commission	Appointed	5	6 yrs.	8000
Colorado.....	Public Utilities Commission	Appointed	3	6 yrs.	4000
Connecticut.....	Public Utilities Commission	Appointed	3	6 yrs.	{ 9000 6000 4000
Delaware.....	No Commission				
Florida.....	Railroad Commission	Elected	3	4 yrs.	5000
Georgia.....	Public Service Commission	Elected	5	6 yrs.	3600
Idaho.....	Public Utility Commission	Appointed	3	6 yrs.	3000
Illinois.....	Commerce Commission	Appointed	7	4 yrs.	7000
Indiana.....	Public Service Commission	Appointed	5	4 yrs.	6000
Iowa.....	Board of Railroad Commissioners	Elected	3	4 yrs.	3600
Kansas.....	Public Service Commission	Appointed	5	4 yrs.	4500
Kentucky.....	Railroad Commission	Elected	3	4 yrs.	3000-600 extra chairman
Louisiana.....	Public Service Commission	Elected	3	6 yrs.	3000
Maine.....	Public Utilities Commission	Appointed	3	7 yrs.	4500-500 extra chairman
Maryland.....	Public Service Commission	Appointed	3	6 yrs.	5000-1000 extra chairman
Massachusetts...	Department of Public Utilities	Appointed	5	5 yrs.	7000-1000 extra chairman
Michigan.....	Public Utilities Commission	Appointed	5	4 yrs.	7000
Minnesota.....	Railroad and Warehouse Commission	Elected	3	6 yrs.	4500
Mississippi.....	Railroad Commission	Elected	3	4 yrs.	2250
Missouri.....	Public Service Commission	Appointed	5	6 yrs.	5500

## ELECTRICAL UTILITIES

TABLE NO. II (continued)

## STATE REGULATORY COMMISSIONS (continued)

State	Title	Mode of Selection	No. of Commissioners	Term	Salary
Montana.....	Board of Railroad Commissioners & Public Service Commission	Elected	3	6 yrs.	\$4000
Nebraska.....	State Railroad Commission	Elected	3	6 yrs.	5000
Nevada.....	Public Service Commission	Appointed	3	4 yrs.	2500-5000 for chairman
New Hampshire.	Public Service Commission	Appointed	3	6 yrs.	3500-500 extra chairman
New Jersey.....	Board of Public Utilities Commissioners	Appointed	3	6 yrs.	12000
New Mexico....	State Corporation Commission	Elected	3	6 yrs.	3000
New York.....	{ Public Service Commission	{ Appointed	{ 5	{ 10 yrs.	{ 15000
	{ Transit Commission	{ Appointed	{ 3	{ 9 yrs.	{ 15000
North Carolina..	Corporation Commission	Elected	3	6 yrs.	5000-500 extra chairman
North Dakota...	Board of Railroad Commissioners	Elected	3	6 yrs.	3000
Ohio.....	Public Utilities Commission	Appointed	3	6 yrs.	6000
Oklahoma.....	Corporation Commission	Elected	3	6 yrs.	4000
Oregon.....	Public Service Commission	Appointed <sup>1</sup>	3	4 yrs.	4000
Pennsylvania....	Public Service Commission	Appointed	7	10 yrs.	10000-500 extra chairman
Rhode Island....	Public Utilities Commission	Appointed	3	6 yrs.	4000-1000 extra chairman
South Carolina..	Railroad Commission	Appointed <sup>2</sup>	7	2 yrs.	\$10 per day- 3000 chairman
South Dakota...	Board of Railroad Commissioners	Elected	3	6 yrs.	4500
Tennessee.....	Railroad & Public Utilities Commission	Elected	3	6 yrs.	4000-600 extra chairman
Texas.....	Railroad Commission	Elected	3	6 yrs.	6000
Utah.....	Public Utilities Commission	Appointed	3	6 yrs.	4000

STATE REGULATORY COMMISSIONS (*continued*)

State	Title	Mode of Selection	No. of Commissioners	Term	Salary
Vermont.....	Public Service Commission	Appointed	3	6 yrs.	\$2000—chairman 4200
Virginia.....	State Corporation Commission	Appointed	3	6 yrs.	6000—200 extra chairman
Washington.....	Department of Public Works	Appointed	3	Indefinite <sup>2</sup>	5000—1000 extra chairman
West Virginia...	Public Service Commission	Appointed	3	6 yrs.	6000
Wisconsin.....	Railroad Commission	Elected	3	6 yrs.	5000
Wyoming.....	Public Service Commission	Appointed	3	6 yrs.	3000

<sup>1</sup> Elected until 1929. <sup>2</sup> By legislature. <sup>3</sup> At pleasure of Governor.

TABLE NO. III

## MASSACHUSETTS HOUSE BILL No. 170, 1928 (with amendments)

An Act relative to the Regulation and Supervision of Gas and Electric Companies. Be it enacted by the Senate and House of Representatives in General Court assembled, and by the authority of the same, as follows:

*Section 1.* Upon application of a gas or electric company, authorized by a vote of the majority in interest of all its stock qualified to vote for the election of directors, the department of public utilities may authorize the company to adjust its capital so that the par value of its capital stock will approximate, as nearly as may be, the amount theretofore paid into its treasury on account of the issue of its capital stock, plus the amount, where such company has not paid dividends averaging seven per cent annually upon the par value of its capital stock and premiums paid thereon from the time of its organization, by which it has failed to so pay dividends averaging seven per cent annually; *provided, however,* that the capital shall not be fixed at an amount in excess of the amount that has been expended by such company for its property used and useful in the transaction of its business, or in excess of the fair value thereof less any outstanding indebtedness. In the determination of whether such company has paid dividends averaging seven per cent annually upon the par value of its capital stock, such per cent shall be calculated each year

upon the amount of capital stock outstanding and the premiums paid in thereon in such year. The number and classes of shares of stock to be issued shall be determined and fixed by the department. Fractional shares shall not be issued, but the department may authorize full shares to be issued upon the payment to the company, by the person entitled to a fractional share, of the difference between such fraction and the par value of the shares. Such adjustment shall be made within six months after such authorization by the department, or such authorization and any action taken thereunder shall become null and void.

*Section 2.* The adjustment of its capital stock under the provisions of this act by a gas or electric company shall effect an amendment of its charter and a contract between it and the Commonwealth by which the company agrees to be subject to and bound by such rates and charges for service as may be hereafter prescribed by the Commonwealth or its duly authorized officers or agents, *provided*, that such regulation and supervision shall not be exercised so as to reduce the income of the company below an amount necessary to enable it to pay dividends sufficient to maintain the market value of its shares of capital stock at their par value.

*Section 3.* No gas or electric company organized prior to July 1, 1928, except such as adjusts its capital stock under the provisions of section two, shall, after January 1, 1929, increase its capital stock except by special act of the General Court.

*Section 4.* The provisions of sections forty-two, forty-three, forty-four, forty-five, forty-seven, forty-eight, forty-nine, fifty-two, sixty-seven and seventy-two of chapter one hundred and sixty-four of the General Laws and acts in amendment thereof or in addition thereto shall not apply to gas or electric companies organized prior to July 1, 1928 except such as petition for adjustment of their capital stock within six months of the effective date of this act and adjust their capital stock under the provisions of this act within six months of the order of the department and abide by and comply with rates and charges prescribed under the provisions of section two.

*Section 5.* Gas and electric companies organized after July 1, 1928, shall, as a provision of their charters, be subject to and bound by such rates and charges for service as may be hereafter prescribed by the Commonwealth or its duly authorized officers or agents, in the same manner as corporations which have their capital readjusted under the provisions of this act, and their organization shall effect a contract to that effect, and they shall also be subject to the duties, liabilities and restrictions set forth in general laws of this commonwealth now or hereafter in force relating to gas and electric companies.



TABLE NO. IV  
CAPITAL INVESTMENT

	1925	1926	1927
Niagara System.....	\$153,792,760.69	\$155,769,665.97	\$157,273,132.98
Georgian Bay System.	5,069,063.87	5,259,249.53	5,315,625.84
St. Lawrence System.	1,040,728.59	1,062,444.88	1,328,384.25
Rideau System.....	1,106,002.20	1,161,658.24	1,173,928.46
Thunder Bay System.	11,740,641.16	12,724,571.03	14,144,679.68
Ottawa System.....	29,333.48	46,843.15	143,441.05
Engineering-Power Sites.....		262,655.18 <sup>2</sup>	7,288.23 <sup>4</sup>
Central Ontario & Trent System.....	13,911,894.31	14,067,963.23	14,260,456.10
Nipissing System.....	1,027,720.47	1,036,000.84	1,054,487.80
Hydro-electric Rail- ways.....	8,473,434.16	9,389,899.60	6,696,522.91
Office & Service build- ings construction plant, inventories, etc., relating to all of the above prop- erties.....	2,807,400.40	2,661,806.34	2,974,119.54
Total.....	\$198,998,979.33	\$203,442,757.99	\$204,372,066.84
Municipalities' dis- tributing systems and other assets....	77,721,093.93 <sup>1</sup>	74,692,540.69 <sup>3</sup>	81,792,678.34 <sup>5</sup>
	\$276,720,073.26	\$278,135,298.68	\$286,164,745.18

<sup>1</sup> Including \$7,551,588.70 of municipal sinking fund equity in H. E. P. C. System.<sup>2</sup> St. Lawrence and Ottawa Systems.<sup>3</sup> Exclusive of \$8,046,868.53 of municipal sinking fund equity in H. E. P. C. System.<sup>4</sup> Algoma District.<sup>5</sup> Exclusive of \$10,143,205.66 of municipal sinking fund equity in H. E. P. C. System.

TABLE NO. V

SPECIFICATIONS FOR 11 CASES OF ELECTRICAL SERVICE USED TO COMPARE  
MONTHLY COSTS ON BASIS OF CORRESPONDING AND COMPARABLE SERVICES

*Case 1*

An ordinary domestic consumer using 36 kilowatt-hours per month. The permanently connected load is 1 kw. Cooking and water heating not included. House of 6 rooms with a floor area of 1400 sq. ft. exclusive of unused basement and attic.

Cost \$.....

Remarks:.....

*Case 2*

A domestic consumer using 175 kilowatt-hours per month for domestic purposes including cooking, etc. The permanently connected load is 8.5 kw. House of 6 rooms with 1400 sq. ft. exclusive of unused basement and attic. Devices over 2 kw. capacity are re-equipped with control devices to preclude their use at same time as electric range.

Cost \$.....

Remarks:.....

*Case 3*

An ordinary commercial consumer using electrical energy for lighting: Monthly energy consumed 200 kw. hr. per month with 1.5 kw. connected load.

Cost \$.....

Remarks:.....

*Case 4*

A commercial consumer using electrical energy for lighting only. Monthly energy consumed is 1,000 kilowatt-hours and the permanently connected load is 7.5 kw.

Cost \$.....

Remarks:.....

*Case 5*

A commercial consumer using electrical energy for lighting, also cash carriers and operation of elevators. Monthly energy consumption is 3,000 kilowatt-hours and the permanently connected load is 15 kw.

Cost \$.....

Remarks:.....

*Case 6*

A commercial consumer using electrical energy for lighting, also cash carriers and operation of elevators. Monthly energy consumed is 6,000 kilowatt-hours and the permanently connected load is 25 kw.

Cost \$. . . . .

Remarks: . . . . .

*Case 7*

A small industrial consumer using electrical energy as follows:

Monthly energy consumed . . . . . 2,000 kw. hr.

Connected load . . . . . 10 kw.

Power factor . . . . . 85 per cent

Voltage . . . . . Secondary distribution voltage

Continuous load. No restrictions as to hours or months of use.

Cost \$. . . . .

Remarks: . . . . .

*Case 8*

An industrial consumer using electrical energy as follows:

Monthly energy consumed . . . . . 10,000 kw. hr.

Measured demand . . . . . 30 kw.

Power factor . . . . . 85 per cent

Voltage . . . . . Secondary distribution voltage

Continuous load. No restrictions as to hours or months of use.

Cost \$. . . . .

Remarks: . . . . .

*Case 9*

An industrial consumer using electrical energy as follows:

Monthly energy consumed . . . . . 21,600 kw. hr.

Measured demand . . . . . 100 kw.

Power factor . . . . . 85 per cent

Voltage . . . . . 4,000

Continuous load. No restrictions as to hours or months of use.

Cost \$. . . . .

Remarks: . . . . .

Case 10

An industrial consumer using electrical energy as follows:  
Monthly energy consumed.....75,600 kw. hrs.  
Measured demand..... 300 kw.  
Power factor..... 85 per cent  
Voltage..... 4,000  
Continuous load. No restrictions as to hours or months of use.  
Cost \$.....

Remarks:.....

Case 11

An industrial consumer using electrical energy as follows:  
Monthly energy consumed.....288,000 kw. hrs.  
Measured demand..... 1,000 kw.  
Power factor..... 85 per cent  
Voltage..... 4,000  
Continuous load. No restrictions as to hours or months of use.  
Cost \$.....

Remarks:.....

TABLE VI

Space was provided in the questionnaires on costs of electricity for remarks concerning methods of computation and special factors that were taken into account by the computers. The pertinent information is presented below:

ALBANY

- Case 1.—We have no sq. ft. area rate, only “counted room.” Above house would probably be 3 Counted Rooms.
- Case 2.—Same assumption as Case 1 above.
- Case 5.—Service Classification No. 1 applies to lighting.  
Service Classification No. 2 applies to power on which cash carriers and elevators only would be connected. Problem as stated indefinite.
- Case 6.—Same as Case 5 above. Two meters would be required.  
All lighting on one and all power on another.
- Case 7.—Rate 2 providing lighting not more than 25 per cent of power demand.
- Case 8.—Rate No. 2 providing lighting not more than 25 per cent of power demand.



## AUBURN

- Case 5.*—Demand determined by indicating meter using highest fifteen-minute peak during month.
- Case 7.*—Demand determined by inspection or by test at option of the company. Above 20 h.p. demand will be determined by indicating meter using highest fifteen-minute peak during month.
- Case 9.*—Demand determined by graphic polyphase wattmeter, using highest fifteen-minute peak during month.
- Case 10.*—Demand determined by graphic polyphase wattmeter using the average of the daily five-minute peak during the working days of the month.

## BINGHAMTON

- Case 1.*—Average home 10 demand units; 6 rooms, 1 bath, 1 hall, 1 porch, 1 cellar.
- Case 2.*—Same as above.
- Case 5.*—Assumed 11-kw. lighting load.  
Elevator motors were served under this classification.  
Elevator motor of 5 h.p. billed under wholesale power rate, with demand charge of \$9—energy 100 kw.-hr. total bill—\$11.50.
- Case 6.*—Assumed 21-kw. lighting load.  
Elevator motors same as above.

## BUFFALO

- Case 5.*—Estimated maximum load, 12 kw.
- Case 6.*—Estimated maximum load, 19 kw.

## GENEVA

- Case 1.*—This rate is \$2 plus 4 cents per kw.-hr., which is an optional rate. Regular rate is first 40 kw.-hr. at 10 cents over 40 kw.-hr. at 7 cents.
- Case 2.*—Rate \$2 plus 4 cents per kw.-hr., an optional rate same as above.
- Case 3.*—(a) Standard rate is first 40 kw.-hr. at 10 cents—over 40 kw.-hr. at 7 cents.  
(b) Optional rate \$2 per month charge plus 4 cents per kw.-hr. on yearly basis with a maximum demand of 10.
- Case 5.*—Assuming a demand of 20 h.p.-kw.
- Case 6.*—Assuming a demand of 25 h.p.
- Case 11.*—If we could secure a customer of this type with as high a load factor and power factor, we would figure out a new rate.

## GLENS FALLS

*Cases 2, 5, and 6.*—Two separate rates for this service.

Information given is not sufficient for computing.

*Case 7.*—Minimum.

## ITHACA

*Case 1.*—1,400 sq. ft. is assumed to be the net area. If 1,400 is gross area as determined from outside measurement of house, bill would be \$3.19.

*Case 2.*—As above, 1,400 sq. ft. assumed to be net area. If 1,400 is gross area, bill would be \$8.75.

*Case 5.*—Load is assumed to be: 5 h.p. elevator motors, 5 h.p. aggregate of carrier motors, remainder lighting. Motors to operate 375 and 625 kw.-hr., respectively, per month. Motor load to be on separate meter.

*Case 6.*—Load assumed to be 15 h.p. elevator motors, 5 h.p. aggregate of carrier motors, remainder lighting. Motors to operate 900 and 500 kw.-hr., respectively, per month and to be on separate meter.

*Case 7.*—The connected load has been assumed to be 10 h.p. in motors and the remainder in lighting. Both to operate 200 hours per month, but to be served by separate meters.

*Case 8.*—An average motor load of 30 h.p. and lighting load of 5 kw., which operates 400 and 200 hours per month, respectively, are assumed. Each is to be served by a separate meter.

*Cases 9, 10, and 11.*—The rate applied has not as yet been made available to all customers in the city. It will, however, be filed for general use in the near future.

It is assumed customer takes energy at primary voltage and provides and maintains the necessary transformer equipment for which he obtains a 5 per cent reduction.

## JAMESTOWN

*Cases 4, 5, and 6.*—Cost computed on basis of demand equal to connected load, although it would probably be less.

## LOCKPORT

*Case 4.*—Demand is measured, therefore connected load may be more than demand. Cost computed on assumption that connected load equals demand.

*Case 5.*—Same as Case 4. Demand is 5 minutes measured and same will apply.

*Case 6.*—Rate same as Cases 4 and 5. Demand would probably be less than connected load.

*Cases 9, 10, and 11.*—Demand and energy charge.

\$2 per h.p. per month of demand for first 250 h.p. of demand, which carried with it 262.5 times the firm h.p. in kilowatt hours, based on 90 per cent power factor.

\$1.75 per h.p. per month of demand for all power used in excess of 250 h.p. of demand which carries with it 262.5 times the firm h.p. in kilowatt hour.

\$.006 per kilowatt hour for all kilowatt hours used in excess of 262.5 times the firm h.p. up to 272 times the firm h.p.

\$.004 per kilowatt hour for all kilowatt hours used in excess of 272 times the firm horse power.

#### NIAGARA FALLS

*Cases 1 and 2.*—These examples do not give a fair presentation of our averages.

#### NORTH TONAWANDA

*Case 2.*—Assumed the lighting load at 1. kw. and heating load at 7.5 kw.

*Case 5.*—Assumed 7.5 kw. lighting load and 1,000 kw.-hr.

Assumed 7.5 kw. power load and 2,000 kw.-hr.

2 meters

*Case 6.*—Assumed 10 kw. lighting load and 1,500 kw.-hr.

Assumed 15 kw. power load and 4,500 kw.-hr.

2 meters

*Cases 9, 10, and 11.*—Primary power.

#### POUGHKEEPSIE

*Case 1.*—A house of six rooms usually has four rooms for billing purposes under rate Classification No. 1 and the cost was determined on that basis.

*Case 2.*—Same as Case 1.

*Case 5.*—Cost determined on following basis:

Separate circuit for motors as they would amount to more than 5 h.p. allowed under lighting rate. Connected load of motors assumed as 6 kw. and monthly energy usage as 300 kilowatt hours under power rate Classification No. 19. Balance of connected load and energy assumed to apply under commercial lighting rate Classification No. 7.

*Case 6.*—For same as stated in Case 5. It has been assumed that 8-kilowatts connected load and 500 kilowatt hours per month would apply to the motors and 17 kilowatt and 5,500 kilowatt hours to lighting. The same rates have been applied as in Case 5.

*Cases 9, 10, and 11.*—It is assumed that metering is at 4,000 volts and that the customer owns transformers located on his premises.

Note:—Since the number of power customers in Cases 10 and 11 is very limited, the general power rate is not always applied, but special contracts are provided which are suitable to the particular conditions.

#### ROCHESTER

*Case 7.*—"Connected load" means nothing in Rochester except in Service Classification No. 2 which is not available for industries or commercials.

*Cases 3, 7, and 8.*—Based on \$5 coal f.o.b. Rochester.

*Cases 9, 10, and 11.*—Primary power. Customer owns transformers.

#### ROME

*Case 1.*—Optional area rate.

1,400 sq. ft. Gross—1,300 nct.

*Case 2.*—Optional Area Rate.

1,400 sq. ft. Gross area.

1,300 sq. ft. Net area.

*Cases 5 and 6.*—No combination lighting and power rate.

Light and power meters would be necessary.

*Cases 9, 10, and 11.*—No demand charge. Instead a minimum charge of \$1 per h.p. or fraction thereof connected load.

#### SCHENECTADY

*Cases 5 and 6.*—At the present time there will be separate metering on lighting and on power. No. 2 Lighting Classification and No. 4 Power Classification would apply.

*Cases 7 and 8.*—Computed on power rate classification.

*Case 9.*—At the present time there will be separate metering on lighting and on power. No. 2 Lighting Classification and No. 4 Power Classification would apply.

*Cases 10 and 11.*—Wholesale untransformed energy rate.

#### WATERTOWN

*Case 5.*—No combined rate. Assume 1,000 kw.hr. for lighting and 2,000 kw.-hr. for power.

*Case 6.*—No combined rate. Assume 2,000 kw.-hr. for lighting and 4,000 kw.-hr. for power.

*Cases 9, 10, and 11.*—No power rate available for 4,000 volts. Computed on basis of Classification 3.



## YONKERS

*Cases 9, 10, and 11.*—No rate for 4,000 volts. Used Classification 6, voltage 13,200. This rate subject to a coal surcharge. Minimum charge \$2,500 per month.

## HAMILTON, CANADA

*Case 2.*—This bill is for three-wire, 220-volt service and incorporated a higher service charge.

## KITCHENER, CANADA

*Case 2.*—Three-wire service.

## LONDON, CANADA

*Case 2.*—Three-wire service.

## MONTREAL, CANADA

*Cases 5 and 6.*—"We do not sell commercial light and power at the same rate. Each is governed by its own rate."

## QUEBEC, CANADA

*Case 2.*—At lighting rate  $5\frac{1}{2}$  cents net, \$9.63 net.

At stove rate  $1\frac{1}{2}$  cents net, \$2.63 net, plus 50 cents per key fixed charge.

*Cases 5 and 6.*—Rate for elevators—passenger, \$30 per h.p. per annum.

Rate for elevators—freight, \$25 per h.p. per annum.

Flat rate.

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